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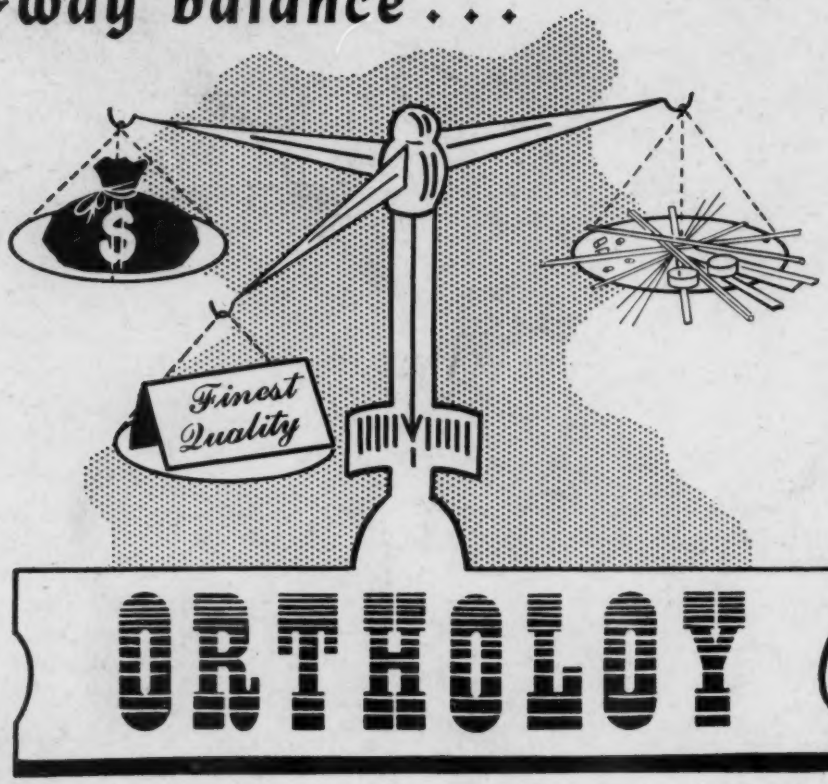
3-way balance . . .



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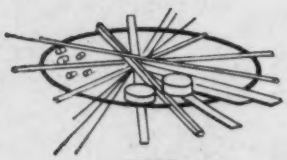

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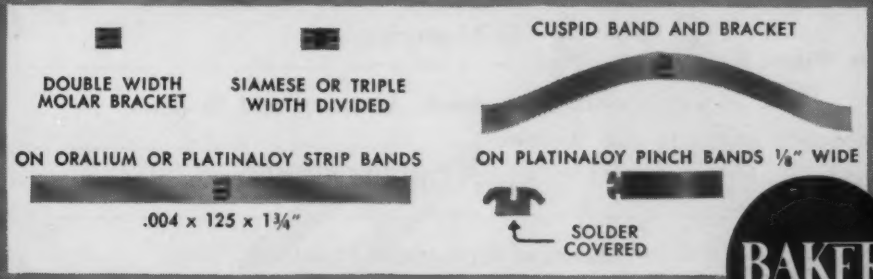
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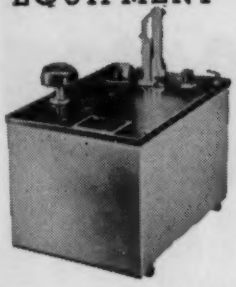

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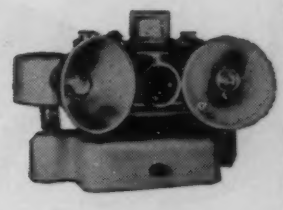

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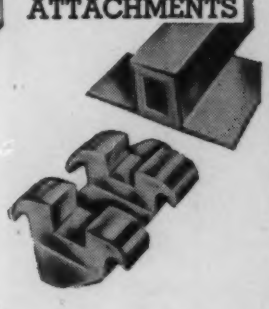

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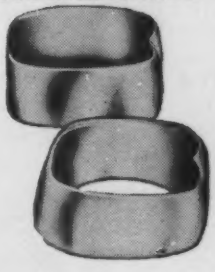

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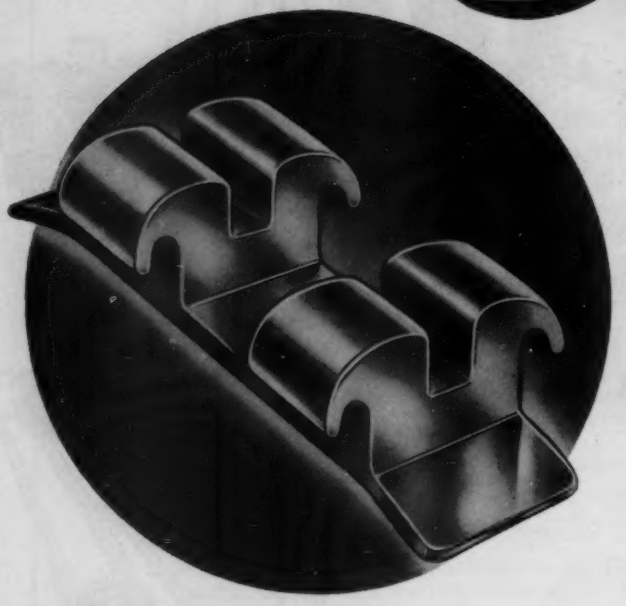

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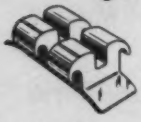

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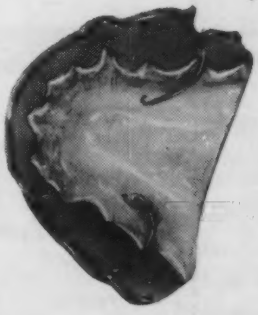

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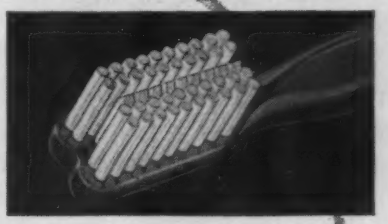

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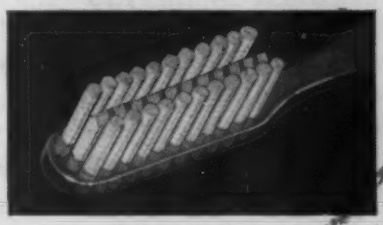

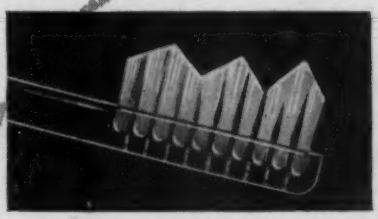

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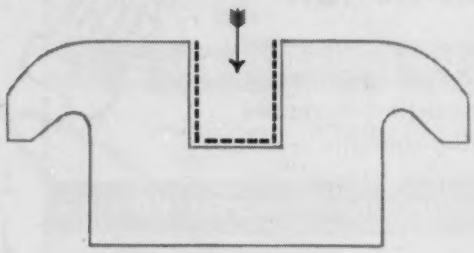
IN ORTHODONTICS as in politics, power is desirable only when it can be controlled. Following the trend toward the use of lighter, more resilient arch wires, Unitek introduced the .018 Edgewise Bracket more than one year ago. Since that time, both the materials and the theory of usage have been thoroughly field tested and approved. As a result, more and more orthodontists are converting their practices to the .018 technique. Many report that using appliances of this size simplifies and shortens treatment time by taking advantage of light, resilient, modern chrome alloy wires. Careful calculations have established the .018 size as being equivalent in strength and in power-storing ability to the size .022 x .028 in precious metals. An important difference, however, is the fact that today's improved chrome alloy wires are more resilient. As a result, they deliver their energy more evenly over a greater distance. This necessitates fewer adjustments while providing faster tooth movement and better tissue tolerance.

Narrower slot provides precise fit for .018 x .025 wire



The history and advantages of this advanced Edgewise technique are discussed in the following excerpt from an unpublished manuscript by Dr. Cecil C. Steiner:

"Early orthodontic appliances were heavy, cumbersome, non-yielding devices which often imposed exorbitant non-resilient forces upon the teeth. These gradually gave way to lighter, more elastic devices that delivered more gentle forces. This trend is exemplified by considering the old jack-screw and other equally brutal devices that preceded it. The stiff and cumbersome Angle "E" arch also had wide usage. It, in turn, was largely replaced by the .022 x .036 rectangular ribbon arch appliance. Since then the Edgewise arch appliance designed for arch wires size .022 x .028 has found great favor. It was in this form that Dr. Angle presented the appliance to the profession.

After Dr. Angle's death, the Edgewise appliance bracket was modified in both design and in material in such a way as to make it capable of delivering stronger forces from the arch wire. It was, in fact, designed for and was capable of delivering all of the forces that the precious metal arches of the day could deliver without becoming distorted themselves.

Then came the marked improvement in the qualities of chrome alloys as band and arch material. Arches made of these alloys were stronger and stiffer and possessed a higher modulus of elasticity. They were capable of delivering more power. They have been widely adopted and used. The precious metal brackets were not designed to stand all of the force that

these chrome alloy arches can deliver, and experience has proven that they failed to do so in many cases. As a result, we have seen an increasing number of double brackets and double-width brackets used in an attempt to get better tipping and torquing action. It is my opinion that what we have needed is not the ability to deliver more power but instead to deliver power under better control. I also believe that when properly controlled and delivered, ample power to move teeth effectively can be stored and delivered in lighter and more resilient arch wires.

Previous to 1933, and for a period of about 3 years, we used specially-made Edgewise brackets with a slot size of .018 x .028. In these slots, arch wires of both precious metals and chrome alloys of that day were used. By the use of these appliances, the average time of treatment was lessened by nearly 3 months, as compared to the time of treatment when using the standard .022 x .028 slot and equivalent arch wires. We discontinued the use of this size bracket because of the shortcomings of the metallurgy of the arch wires of that period.

Smaller arch wires deliver less strain upon brackets and stand less chance of distorting them. Undistorted brackets deliver the power that is stored in the arch wire, accurately. A wire of smaller dimension delivers stored power over a much greater distance than does a larger one. The ratio of the size to the distance that the power is delivered is approximately as one to four (1:4).

A given amount of force will distort an .018 x .025 arch wire approximately twice as far as it will one of .022 x .028, when the force is applied against its thin dimensions. That means that a given amount of power is stored over about twice the distance when a smaller wire is used.

This, too, is interesting. A chrome alloy Edgewise arch wire of the dimensions .018 x .025 has about the same stiffness and strength as does the .022 x .028 precious metal arches originally suggested by Dr. Angle, but with this important exception: they will store and deliver that power over a much greater distance without distortion and do it more continuously and more evenly.

It was for these reasons that about 2 years ago we prevailed upon the Unitek company to furnish us with modern chrome alloy brackets with a slot size of .018 x .025 for retesting. Again, the time of treatment was reduced — this time more drastically, and that was doubtless because of the improvement of chrome alloys. Less soreness was experienced by the patients, and we surmise that there has been better tissue tolerance of the treatment that was carried on with these lighter appliances.

I am sure that the improvement and the further development of chrome alloys for the construction of orthodontic appliances now indicates the production and the fair trial of the Edgewise arch appliances with arch wires of a reduced dimension. After long and careful trials, we suggest the use of brackets with the slot size of .018 x .025 when used with chrome alloy arch wires."

BY CECIL C. STEINER, D.D.S.

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LEONARD M. MONHEIM, B.S., M.S., D.D.S. Professor and Head of Department of Anesthesia. University of Pittsburgh, School of Dentistry; Assistant Professor, Department of Surgery (Anesthesia), University of Pittsburgh, School of Medicine.

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It is the author's sincere opinion that there is no procedure in dentistry which cannot be performed painlessly, if the dentist has the will to do so. To practice pain control successfully, the practitioner should have a thorough understanding of the nature of pain and how it comes about. In this book the author explains the neuroanatomy involved, the pharmacology of the local anesthetics, analgesics and associated drugs. Here for the first time the over-all control of pain is advocated in dental practice.

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THE DEVELOPMENT OF A TREATMENT PLAN IN THE LIGHT OF ONE'S CONCEPT OF TREATMENT OBJECTIVES

WILLIAM L. WILSON, D.M.D., BOSTON, MASS.

IT IS a privilege to be invited to participate in this program and to share in the assignment of this all-important subject.

As this discussion deals with the development of a treatment plan, it will be difficult to be completely objective when, of necessity, one has a subjective preference for a type of mechanotherapy. One might be circumspect and stress the mechanotherapy. To do so, however, would limit the significance to some mechanical considerations. In this discussion, there will be a sincere attempt to resist this temptation and to deal with these matters in their broad sense. If, from time to time, a shading of personal preference is sensed, I beg your understanding of the difficulty of complete detachment in a matter where, of necessity, one must be so intimately involved.

OBJECTIVES

Our treatment objectives[1] are concerned with both occlusal balance and facial harmony. There is a significant relationship here, but this is by no means complete. Accepted standards of facial balance seem to gravitate from one extreme to the other. We find reactions both to the earlier concept of excessive fullness of lips and to the more recent dished-in profile. One must recognize that the child's facial form is continually in a transitional state. Rarely does a straight-line profile become more procumbent, and commonly what appears to be an excessive fullness of the lips in repose shows marked diminution in later years. We must recognize that perfectly satisfactory dentures and faces may fail to conform to any preconceived statistical norms. How, then, must we regard profiles?

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It is incumbent upon each orthodontist to dismiss the concept of a norm for a standard and to develop for himself an awareness of the range of variability with regard to faces from random sampling experience with untreated faces. To do this, one must recognize that a mean, not a normal, exists and that where the variation from the mean is not great the orthodontic treatment should not be predicated upon any basic change. Certainly, it must never be away from the mean and toward the extremes. Where the variation from the mean is great, the consideration of basic change should be toward the mean but no further. This must be evaluated in terms of the possibility of establishing occlusal balance. This is not to be confused with the desirability of uprighting incisors that have either a lingual or a labial inclination. Such corrections may reflect favorably on the profile.

If we are to view faces objectively, we must recognize the infinite variation of racial, familial, and individual form and realize that perfectly normal stable dental occlusions may be found in a wide variation of such faces. When we study faces, we must see what we see and not what we are led to believe that we must see. We must avoid producing excessive protrusions or retrusions. If we are to expand arches or extract teeth in our treatment, we must make such decisions in terms of the relative degree and stability of the projected dental results, with the profile an important but secondary factor.

Our objectives with regard to occlusion are concerned with anterior alignment, arch relationships, as expressed by interdigitation in the buccal segments, and the harmony of related supporting structures. Of equal importance is the matter of an adequate anterior bite level. An anterior close-bite is not an entity in itself but may become an etiological factor in tooth attrition, periodontal breakdown, or significant changes in anterior tooth position.

TREATMENT PLANNING

There are certain dynamic occlusal changes which occur when arches are expanded and arch relationships changed. There are other dynamic occlusal changes which occur when teeth are extracted, depending upon the nature of contiguous factors as well as the selection of critical teeth, and these are commonly reflected in the anterior bite level.

I fully recognize the tendency to substantiate a hypothesis by building up a set of criteria based partly on fact and partly on fiction. Each of us must be fully aware that in orthodontics there can be no infallible system of treatment. If there is a rule in orthodontics, it is that for every law, rule, or statement one can inevitably demonstrate an exception.

There are, however, some basic considerations, some calculated expectancies which, although sometimes qualified by a host of minute departures, are nonetheless valid. The consideration of these occlusal dynamics as they affect the anterior bite level becomes an important factor to be considered in treatment planning.

One can ordinarily anticipate an anterior bite opening with the following procedures: (1) expansion of the arch, (2) distal movement of the maxillary

buccal segments, (3) labial movement of the incisors, and (4) Class II mandibular changes.

There are many factors which qualify the amount of bite opening in treatment: (1) the amount of expansion, (2) the amount of anteroposterior change in the mandible, (3) the amount of distal movement of the maxillary first molar, (4) the axial inclination of the molar before movement, (5) the degree of inclination of the posterior mandibular occlusal curve against which the molar comes into precocious occlusion, (6) the amount of Class II mandibular change, (7) the length of the incisors, (8) action of the tongue opening the bite in certain cases, (9) growth changes during treatment, (10) the selection of critical teeth for extraction and the amount of deficiency to be compensated, and (11) arch-flattening orthodontic procedures.

In the permanent dentition, cases in which there is adequate arch length ordinarily do not present a serious problem in treatment planning. In those cases in which there is a deficiency in arch length, however, the size and shape of teeth are noted and the aggregate of tooth diameters is determined. Rotations and spaces are evaluated against treatment needs. Axial inclination of the teeth is noted, and these factors are evaluated against the molar-incisor distance as projected along the arch. The resultant deficiency then constitutes the problem in treatment planning.

There are several sources available for the reduction of this deficiency. In cases in which there has been lingual tipping of the incisors, labial tipping will slightly increase the arch size. In certain cases slight labial bodily movement of the incisors is warranted. Where indicated, molars and premolars may be tipped or moved in a posterior direction to increase arch length. This must be done with an awareness of the position of the second and third molars. In such distal movement of the buccal segments, there is an automatic increase in arch width.

When the axial inclination of the teeth is favorable, it is possible to achieve some increase in arch width and length by buccal movement of the premolars and canines, within limits. It should be borne in mind that there are biogenetic limits beyond which this expansion will not be tolerated. This should always be done with an awareness of supporting bone within an individual norm and without violation of esthetic harmony.

Most certainly, all cases are not amenable to arch increase. There are many in which the divergent axial inclination or the disproportion is so great that the extraction of one, two, or four teeth is clearly indicated. On occasion, one finds it difficult to justify the use of appliances after such extractions. In most cases in which extractions are planned, however, considerable mechanotherapy is required to balance the occlusion. Once more the bite level becomes a key factor in consideration of treatment planning.

In many extraction cases there is almost an automatic closing of the bite. This is to be desired in edge-to-edge or open-bite cases as a calculated part of the treatment. One can generally expect an anterior bite closing with the following procedures:

1. *Arch contraction.* This is greater with the mesial movement of the posterior teeth and with lingual retraction of the incisors. The contraction of the buccal segments produces a significant but smaller amount of closure.
2. *Extraction of teeth mesial to the first molars.* There is a significant amount of anterior bite closing with the extraction of maxillary first or second premolars. The extraction of corresponding teeth in the mandible may produce a much larger amount of bite closure, and this is in direct proportion to the amount of space to be closed. In severe deficiency cases where the amount of space closure is slight, there may be but little bite closure. Extraction of teeth distal to the first molars has no significant effect upon the bite level.

This is an anatomic phenomenon that occurs independently of appliance selection. To counteract bite closure, bite planes or a full multiband strap-up may be used; the second molars can be banded to gain additional anchorage, and the entire arch can be flattened. This is a dramatic procedure, but in a few years following removal of the appliances a considerable degree of bite closure may recur.

These occlusal dynamics are changes resulting from the interaction of certain local factors which affect the supportive nature of contiguous teeth in the dentition, altering the functional stress and affecting the structural balance, the degree of which is qualified by the osseous and muscular scaffolding of the denture.

It becomes obvious that, while we achieve our results through mechanical means, ours is a biologic problem. When treatment planning runs counter to these trends of occlusal dynamics, failure will follow. The converse is true.

This is something which is independent of any type of appliance. One might refute this and attempt to expand arches with an edge-to-edge or opened bite. Here a further increment in bite opening becomes an obstinate problem that is almost impossible to correct. On the other hand, when lower premolars are removed in certain close-bite cases with reasonably good mandibular arches, simultaneous space closure and improvement of the bite level constitute a long and difficult procedure, and the high incidence of relapse and anterior bite closure upon removal of appliances is nothing more than occlusal dynamics at work. Orthodontic mechanical treatment, then, must be directed toward the objectives in the individual case, which are qualified by the calculated directional trends in occlusal dynamics.

In certain cases, it is possible to utilize the counteracting or neutralizing effect of these dynamics. In Class II extraction cases one might anticipate an increment of vertical loss from the extractions and at the same time an increment of vertical gain from the Class II changes. The degree must be evaluated in the individual case. Local factors, such as a tongue-thrust, may affect the changes quantitatively.

As we know, there are different types of Class II, Division 1 cases, and there are different methods of defining them. They must be approached in

distinctly different ways because of the calculated occlusal dynamics which enhance or limit orthodontic results, depending on choice of treatment approach.[2]

Some Class II cases require simple retraction of space maxillary anterior teeth along with slight maxillary expansion to permit the mandible to come forward. Others may need distal movement of the maxillary buccal segments. This helps to improve the relationship and sometimes produces adequate arch width. If more arch width is needed, buccal expansion follows the distal movement. This sequence is important. It permits the premolars to be carried distally through medullary bone. After expansion, distal movement through cortical bone is slow and difficult.

In Class II cases with close-bite, distal movement of maxillary first molars immediately opens the bite and removes occlusal interference in the buccal segments, permitting Class II changes. This accounts for the success of Class II extraoral therapy on maxillary first molars. It is almost axiomatic that with Class II changes one can expect a degree of bite opening. This is desirable in close-bite cases.

In open-bite Class II cases, one must consider this and use compensatory bite-closing factors, such as extraction procedures. If there is a deficiency in both arches, four premolars might then be removed. We have a surprisingly good number of adequate mandibular arches in Class II cases, some of which have serious maxillary arch deficiencies. It is an error to inflict extraction unnecessarily on the mandible when the deficiency is in the maxilla, for under these conditions lower spaces are difficult to close and nearly impossible to retain. They contribute a high degree of bite closure which cannot be easily corrected and retained.

In open-bite cases in which the mandibular arch is adequate, one should consider removing maxillary premolars, retracting the maxillary anterior teeth, and leaving the first molars in mesial functional position.

On the other hand, in some Class II cases with close-bites arch requirements demand extraction in the upper arch. Here the maxillary third molars might be removed and the second and first molars carried distally.

If, perchance, the maxillary second molars are carious and the unerupted third molars are in good position, extraction of the second molar and distal movement of the first molar with subsequent distal movement of the buccal segments will open the bite and correct the relationship and the deficiency at the same time.

Class II, Division 2 cases generally need axial correction of intruded maxillary incisors. With this restrictive influence removed, mandibular arch relationship changes are generally rapid. Common to these cases is an excessive close-bite which may improve with treatment. This sometimes requires the assistance of a bite plane. Extractions are rarely required in Class II, Division 2 cases. In the face of the bite level factor, the hazards of extractions might very well be unsurmountable.

In Class III cases[3] of known genetic origin, we must recognize the difficulties of treatment and retention; this applies also to those cases with obtuse gonial angles or anterior open-bites. These show a high degree of correlation. Class

III cases with anterior close-bite and with anterior underdevelopment of the maxilla respond more favorably and have a higher retention index. Extraction may be determined by the individual quadrant analysis. Class III therapy is successful when local factors are causative and fails when etiological factors continue to be operative.

Most Class I cases can be categorized as follows:

1. Those in which adequate arch length permits arrangement of teeth without significant arch changes.
2. Those in which arch deficiencies can be dealt with by expansion or anteroposterior changes within the arch.
3. Those in which extraction is a made-to-order solution.
4. Those in which the approach in the second and third categories is not completely satisfactory and the advantages of each must be weighed against the inherent disadvantages.
5. The rarely discussed but not uncommon large arches with small teeth being spaced. These are perhaps the most difficult of all to manage and to retain.
6. The multiple possibilities of midline discrepancies which must be analyzed in terms of local arch causes, facial asymmetry, contributing factors, and functional closure factors. Here the treatment is deployed against the etiological factor involved.

In Class I cases, as in all others, trends in occlusal dynamics are basic in consideration of treatment planning.

EARLY TREATMENT

Many malocclusions, if untreated at an earlier age, continue to deteriorate until they have reached a very serious deformity in the permanent dentition, sometimes needlessly requiring extractions. There are many beneficial results to be accrued from early treatment. The objective of treatment in the deciduous dentition should be to restore, wherever possible, a degree of normalcy which will elicit from the supporting structures an early assistance to the development of a full genetic potential. Where the potential is a desirable one, the prognosis is favorable. The converse is true.

There is nothing in orthodontics quite so dramatic as the management of functional mandibular lateral displacement with anterior midline discrepancies. With properly timed expansion of the upper arch, functional centric occlusion is restored. This is not true, however, of asymmetrical skeletal anomalies.

In the early treatment of Class II and Class III malocclusions, notable successes can be demonstrated. In certain cases the results might be partial and require close observation and continued treatment at a later age, but here the problem has been reduced. On the other hand, with certain of these cases the prognosis is unfavorable and treatment in the deciduous as well as in the permanent dentition produces an incomplete result.

In Class I cases, the picture is not as clear-cut. A Class I occlusion in the deciduous arch is diagnosed as one that is too small or too narrow on a chronologic level and in anticipation of requirements for eruption of the succeeding

teeth. It may be said that broad arches with multiple interdental spaces would indicate sufficient arch length for the developing transitional and permanent dentitions. This, however, is not always the case. Sometimes such arches are followed by crowded and irregular teeth. On the other hand, reasonably small arches with no spacing at all frequently seem to develop and integrate properly to contain well-developed permanent arches. There is no known method, radiographic or otherwise, that can predict accurately in such cases.

If treatment is started in the very narrow arches, the objective should be a limited one, namely, that of providing the maximum change at that time consistent with chronologic levels. This is to be considered the first stage of possibly a two- or three-stage treatment. The fact that such a case sometimes requires a second stage of treatment does not condemn the first stage as being a failure. The first stage has as its limited objective the accomplishment of those things which can be achieved during that period. When those things are accomplished, the requirements for the second stage of treatment may be reduced or sometimes even eliminated.

TRANSITIONAL TREATMENT

The mixed dentition provides a fertile opportunity for full orthodontic treatment in many cases. As pointed out in the previous discussion relative to the mandibular arch, the mesiodistal width of the second deciduous molar exceeds that of its permanent successor by a varying but significant amount. By retaining molar position, we provide excess space into which crowded canines and premolars might erupt. In certain cases, by maintaining the full arch length, it is possible to guide individual eruption of selected teeth into position. This is a procedure which may be followed in both arches, with the result that a number of malocclusions are resolved with the eruption of the last permanent tooth into position. In other cases, however, a deficiency may still exist and the treatment will be carried through into the permanent dentition for completion.

In many cases treated in the mixed dentition one notes an immediate improvement in facial balance. This is because treatment is being carried out during a period of active growth. If expansion is to be attempted in the transitional dentition, it will be most effective during the age when the roots of the deciduous teeth still remain rather long. During this stage, too, control of exfoliation of teeth will avert some unnecessary ectopic eruption of permanent teeth.

If transitional treatment offers some advantages, it also poses some problems. Careless expansion of the buccal deciduous teeth can very well tip the crowns buccally and displace the roots lingually along with the erupting permanent teeth. In this instance, the very purpose of expansion is defeated.

Careful analysis of second and third molars before distal driving of the first molars becomes imperative. It is a simple matter to impact second molars and depress them between the first molar and the erupting third molar in the mandible. It is a simple matter also to push the maxillary second molar into buccal occlusion.

This is the age, too, at which mild tongue-thrusts become severe. There is the unpredictability of cuspid eruption—sometimes delayed, sometimes impacted

lingually. This frequently upsets the estimate of treatment time. During the late transition, treatment of Class II problems with mandibular anchorage is very hazardous.

If there are unpredictable but favorable facial changes that occur during this period, there are likewise unpredictable and unfavorable changes which occur. Gonial angle changes may become increasingly apparent, or the chin may fail to develop fully. These have a significant effect upon the appraisal of the ultimate facial form.

SERIAL EXTRACTIONS

At present serial extractions are enjoying a wave of popularity. It is rationalized that where extractions are indicated, an earlier serial extraction might be preferable. This reduces the space-management problem in some of the more difficult extraction cases. Dramatic clinical successes are demonstrated. On an increasing scale, inexperienced orthodontists and dentists are now using serial extractions as "preventive orthodontics."

The nonselective, widespread use of serial extractions with inadequate diagnostic experience is producing some insoluble occlusal problems along with loss in the lower facial third. This procedure does not necessarily assure a favorable cuspid eruption, and on occasion it does encourage development of a lateral tongue-thrust with later unfavorable occlusal sequelae if strict timing is not observed. The facts are that no matter how strongly afterthought might indicate that serial extraction would have been advisable, there are not sufficiently valid diagnostic criteria, except in the extreme case, to leave the orthodontist free to make such a decision without an element of danger.

In medicine and dentistry, attitudes toward new therapies seem to demonstrate a familiar pattern: (1) the period of discovery, (2) a period of widespread and indiscriminate use, (3) a period of agonizing reappraisal, and (4) the period when true value is determined with limitations and dangers fully understood, and selective discriminate use is practiced.

With the current widespread and reckless use of serial extractions, some of us are now on the threshold of an agonizing reappraisal.

RETENTION

Too little emphasis is being placed upon the importance of retention. There are certain forces for reversion that continue operative regardless of the type of mechanotherapy used. Rotations of teeth may recur, whether extractions are used or not. There is a tendency for the mesial portion of upper lateral incisors to revert to the more labial position, and the peculiar irregularity of mandibular incisors tends also to reoccur. Bites which have been opened tend to close slightly, restricting mandibular cuspids and affecting the incisors. Diastemas between central incisors are troublesome.

There is the influence of late-erupting second molars into sometimes unpredictable positions, and the third molars represent a calculated hazard. This

problem must be resolved before retention can be considered complete. Indeed, in the face of persistent perverted musculatures, retention, however long, must be considered to be inadequate.

It is possible to demonstrate relapses which have been re-treated and then retained for a longer period of time and found to be perfectly stable. Retention, then, must not be considered an isolated factor but, rather, an integral part of the total concept of orthodontic treatment, and it must not be underestimated.

PERFECTIONISM

Part of the assignment here is the matter of perfectionism in orthodontics. This is of utmost importance. An analysis of perfectionism brings idealistic academic standards under scrutiny and re-evaluates them in terms of their realistic workability and honest practicality. There are certain conditions under which we must qualify our objectives and hence our treatment planning. It is proper that we should face this problem openly and squarely.

The purist would regard perfection as the unattainable ideal. We orthodontists, however, take certain license in assuming that occlusions which attain certain accepted orthodontic standards are approaching perfection. However much this might be subject to question, we are all nevertheless involved very intimately with this problem of perfection and perfectionism.

Perfectionism has many facets, and the less that one screens and selects his cases for treatment and the more that he is involved with the multiplicity of occlusal problems, the more realistic he becomes concerning the limitations with regard to perfection in orthodontics. This is not to mention the difficulty of even accomplishing anything at all for some of the more difficult problems. Fortunately for us, the large majority of cases respond well to available mechanotherapies and warrant nothing less than the pursuit of excellence.

There are other problems in which perfection cannot be realistically considered to be an objective:

1. Cases in which normal physiologic factors cease to be present or in which etiological factors continue to be operative; not the least among these are persistent habits and musculature deformities.
2. Class II cases which are not specifically micrognathic but in which the maximum response leaves the relationship slightly deficient.
3. Genetic Class III cases, those with obtusity of the gonial angle and anterior open-bites.
4. Class I open-bites of skeletal origin. Attempts to extrude teeth into occlusion show a very low retention index. This is not to minimize the equally discouraging tongue problems. Open-bites from oversized tongues, although corrected, leave the etiological factor still present and the reversion rate is high. Tongue-thrusting where tongue size is not obviously disproportionate will yield results proportionate to tongue control.
5. Close-bites in Class I cases or in Class II cases with little curve of Spee. One cannot flatten an occlusal line which is already flat. Here, too, we have a low retention index.

6. The assortment of bizarre occlusions which defy description, involving multiple factors of skeletal and dental disproportion and imbalance. Here we must be content with limited objectives of restoring a degree of functional efficiency with some acceptable esthetics.
7. Class II, Division 2 cases which do not respond with equal results.

Ordinarily mandibular arches in these cases are good. The variations in the upper arch determine the prognosis. Although upper arches are not normally narrow in such cases, there are variations in arch length. We commonly find four types of Class II, Division 2 malocclusions:

1. Those in which the upper arch is short or deficient. Here the central incisors may be uprighted and the buccal segments moved distally, utilizing favorable reciprocal anchorage, and the prognosis is excellent.
2. Those in which the upper arch is slightly deficient and labial uprighting of the incisors is in order; here the prognosis is good.
3. Those in which the upper arch is well formed but the buccal teeth are small and spaced, with the incisors lingually tipped. Here the counter problems of anterior alignment and arch condensation, along with treatment of the close-bite, pose problems which leave the prognosis poor.
4. The extreme Class II, Division 2 case with adequate upper arch and linguoversion of all four or six maxillary anterior teeth—not an uncommon genetic type. If resistant to treatment, it is even more so to any adequate retention.

Perfection is qualified also by extremism in expansion or extraction practices. The question in orthodontics is not *whether* to extract but *when* and *which* to extract, and one has to weigh the alternatives against the resultant calculated trends in occlusal dynamics. Where one resorts to excessive expansion, a degree of relapse in proportion to the excessive expansion can be expected. In such cases, too, an opened bite and a protrusive profile will be risked.

On the other hand, when extraction procedures are applied to cases which might have been treated otherwise, many times the spaces are never completely closed. In other cases they have been closed, but the spaces may recur, even though roots might have been paralleled. This is also relapse, but it may be remedied by interproximal fillings. Likewise, one may find a retrogression toward a close-bite after retention has been dropped. The seriousness of this relapse has already been indicated. Increasing anterior bite closure in extraction cases may restrict and crowd the mandibular incisors or cause periodontal problems. Thus, we see that the matter of relapse is a double-edged sword over our heads when we are indiscreet in either our expansion or our extraction policies. In a small number of borderline cases, diagnostic procedures leave the question of extractions still in doubt. Here a short period of exploratory treatment is warranted to justify the final decision.

Perhaps the most challenging orthodontic cases are those deficiency cases in which all treatment measures short of extraction fail to provide quite enough room for alignment of all the teeth. This deficiency will leave a slight irregularity. On the other hand, there may be clinical contraindications for extraction; there might be axial inclinations of teeth which would indicate a degree of difficulty in retaining space closures, or there might be a deep anterior close-bite. Here the choice is whether to enlarge the arches; reduce the overbite and risk a degree of relapse with some anterior irregularity; or to extract and regulate with problems of retention, risking spaces and a retrogressive close-bite.

In such a case, there is no ideal solution and one is forced to make a choice. This must be done in consideration of the future dental health of the patient in posttreatment years. However desirable it might be for the patient to have perfectly straight mandibular incisors, it is an indisputable dental fact, which can be demonstrated in the partial-denture clinic of any dental school, that creation of the classical lower partial denture consists of supplying the posterior teeth where the six mandibular anterior teeth, however irregular, remain as the last and the most durable teeth in the mouth.

On the other hand, if one consults with the periodontist or the occlusal rehabilitationist concerning the advisability of increasing the anterior bite closure, with its posttreatment consequences, the answer is supplied by those most qualified to evaluate the future dental health of the patient. Is this not more reasonable than strict adherence to an orthodontic dogma?

In some of our borderline cases we might do well to look to the advantages of interproximal stripping of certain oversized teeth. Here we are applying our treatment to the source of the problem. In certain cases, also, it is possible to transfer the deficiency in a posterior direction by distal movement into the area of the third molars, with the calculated intent of planning third-molar extraction.

There are some other areas in which we cannot seek perfection but must be content with making a choice. There is the group in which we are faced with unhappy choices, such as the patient with the retruded profile and procumbent teeth. Do we improve the teeth and worsen the profile?

We have the purely dental consideration in the matter of congenitally missing second premolars and large second deciduous molars. Do we extract the teeth early and simplify alignment of displaced anterior teeth, thus causing the dentist an endless prosthetic problem in restoration of the missing teeth during the adolescent caries period?

There is a problem of Class I occlusions with a marginal overbite and an excessive width of the mandible with the posterior teeth in buccal occlusion. Any attempt to correct this posterior cross-bite is fraught with extreme danger of opening the anterior bite. Is it not better here, then, to do no orthodontic procedures at all but merely to equilibrate the posterior occlusion?

We have problems of arch-crowding and irregularity resulting from disproportion in tooth size. The teeth most commonly involved are the mandibular and maxillary lateral incisors and the mandibular second premolars. Here we

have a choice: Do we orthodontically treat the case, sometimes disturbing the arches in rather extreme fashion? Or do we treat the source of the problem and reduce the width of the oversized tooth? Or will it be better to do nothing at all and leave the slight irregularity and the undisturbed teeth?

Treatment of rotated cuspids and premolars can be an essential part of treatment. In fact, overtreatment may be the better part of wisdom. Rotations are not ordinarily a difficult orthodontic problem. Retention of such teeth is another matter, however, particularly as concerns the cone-shaped premolars. A question arises, then, as to minor rotations with their long required retention in the face of a high caries index.

There is the problem of missing maxillary lateral incisors and the disposition of the cuspid. In an otherwise normal arch the cuspid can be retained in normal position and the lateral incisor prosthetically supplied. If there is a deficiency in the maxillary quadrant, the quadrant may be condensed and the cuspid carried into lateral position and equilibrated. There is a third problem, however—that of the cuspid which erupts halfway between the first premolar and the central incisor where arch condensation is not indicated. We can move the cuspid into its normal position and supply the lateral incisor, or we can move it into the position of the lateral incisor, shape it, and equilibrate it and supply an artificial cuspid. This is a far more satisfactory prosthetic solution.

It serves the convenience of the orthodontist to align the anterior teeth tightly into occlusion for purposes of retention. There is some question, however, as to whether this ultimately serves the best interests of the patient when tooth attrition and periodontal load are considered.

MECHANOTHERAPY

There is another limiting factor in our search for perfection, namely, the problem of mechanotherapy. No one system has a priority on perfection. Each of us can adhere strictly to a system of orthodontic mechanics and produce satisfactory results in a group of cases that is tailor-made for the system. This accounts for the many fine results obtained by orthodontists using different appliances which vary from the most simple to the multibanded devices. However, applying a system to the infinite variety and broad spectrum of orthodontic problems is futile. This truth becomes increasingly evident to the orthodontist after his five- or ten-year honeymoon with such a system.

For a long time we have predicated our treatment planning on limitations of our mechanotherapy. Many cases that required extraction have been expanded because the appliance was not adapted to the problems of space management. This is an inherent weakness of some of the simple orthodontic appliances. There are multiple deficiencies in the multibanded appliances. They are not well adapted to transitional treatment. The necessity for awaiting full eruption sometimes permits a marked worsening of the malocclusion to occur. The multiple thicknesses of twenty-four or twenty-eight bands, each with two interproximal thicknesses of metal and cement, require several millimeters of space for mere placing of the appliance. In some instances, this is more space than

would be required for treating the case if such an appliance were not used. Additional arch increase under these conditions is difficult. There have been many needless extractions just to accommodate the appliance.

Objectives in orthodontic treatment must not be subordinate to the limitations of an appliance. Valid objectives must be defined first and then mechanical means must be selected to implement these objectives.

We have many superior appliances available, each adapted to specific needs and each having areas of limitation. Certainly no one with a historical sense doubts that new appliances will supersede and replace those to which we cling so tenaciously. At the present time, however, there is reason to believe that knowledge and personal skills have not kept pace with appliance development and that notable areas of usable treatment possibilities remain untapped.

In dealing with our occlusions, we must consider not only what is orthodontically possible but also what is dentally desirable. Then our objectives will be truly realistic. Our concepts of treatment must be predicated upon practical values and practical consequences and judged for true value solely by the standards of their workability.

During the past two days of this meeting the concepts of diagnosis, treatment planning, and orthodontic objectives have been developed. The fruition of all these lies in our own philosophy toward perfectionism with regard to these objectives.

We know that there is a degenerative process continually playing into the hands of mediocrity. Because of restrictive limitations, we recognize that perfection is something from which we may fall short, but we hold that it is the goal toward which we must continually strive. Not infrequently economic considerations or the desire of the patient will cause us to modify our objectives, and still we achieve significant and worth-while improvement. How wrong it would be to say "all or nothing"!

It would be a great mistake if in our concern for producing better mechanotherapies we were to neglect the need for humanistic thinking. One of the supreme challenges of education is to fit the orthodontist to make well-informed, enlightened, discriminating choices—to take the broad view and, where his conscience dictates, to modify his objectives and to have the courage to pursue them. For this, we need to know more than mechanotherapy.

Unless broad, humanistic understanding directs our mechanical skills and makes orthodontists and teachers alike aware of the values that are true measures of our professional responsibility, we shall find ourselves swept helplessly along by a flood of appliance considerations. Appliances will become our masters when they should remain our servants.

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230 Beacon St.

ORTHODONTICS IN 1969

HAROLD HILLENBRAND, D.D.S.,* CHICAGO, ILL.

WHEN we attempt to estimate the future—which is the task assigned to this panel—our estimate, in order to be reasonably valid and productive, must be formed with a sense of purpose or objective. To do otherwise is to engage in "guessing games" or in what the sociologists call "onward planning for ongoing programs." These are pleasant but fruitless adventures designed to collect all the clichés into one place and to give a peculiar happiness to those who are repeating them as though heard for the first time.

The president of Yale University, A. Whitney Griswold,[1] in commenting on our educational system, has made some sharp remarks in this connection, comments that apply easily to the problems which this panel is discussing today:

> As we follow the debate over our educational system, that system's greatest need becomes increasingly clear. It is not money; we have plenty of that. It is not educational facilities or teachers' salaries; we could provide for both of these liberally if we were only willing to pay for them. It is not curricular reform; we have the skills and the knowledge to accomplish that, too. The greatest need of all, since all others wait upon it, is a sense of purpose. There is no lack of stated purposes in our catalogues and matriculation ceremonies and baccalaureate addresses. Nor do I mean the ad hoc purpose of defending ourselves against possible Russian aggression, vital as that is. I mean a combination of faith and conviction that impels us to take our stated purposes seriously, to have the moral courage to practice what we preach. I mean, too, the intellectual honesty to measure what we do against clearly defined criteria consistent with our stated purposes and not against expediency however disguised as "public relations."

I find my assignment as a member of the panel a materially easier one, for there is already good evidence that both the dental profession and the specialty of orthodontics are making surveys and studies with definite and specific purposes. The Survey of Dentistry in the United States, now in its second year, is being conducted under the sponsorship of the American Council on Education at the request of the American Dental Association. This study, whose purpose has been clearly stated, will attempt "to ascertain and assess the achievement, resources and potentialities of the dental profession in the United States with a view to determining the desirable areas of future growth and development of the profession and with a view to describing and recommending improved approaches, technics and methods for the better provision of an essential health service to the American people."[2]

Presented as part of a panel discussion at the annual meeting of the American Association of Orthodontists, Detroit, Michigan, May 7, 1959.

*Secretary of the American Dental Association.

This basic objective is obviously shared by the specialty of orthodontics, and there is sound evidence of this in the report of the Orthodontic Workshop sponsored by your association at the University of Michigan in June, 1958. This was a penetrating and fair-minded examination of some of the problems which confront the specialty as an important element of a major health service, and the American Association of Orthodontists is to be congratulated upon undertaking it and completing it so successfully. The questionnaire which formed the basis of Dr. Graber's report to you on this panel is also evidence that there is a real effort to look at problems, regardless of whether or not those problems are what some call "delicate and controversial." The splendid response to this questionnaire indicates, indeed, the interest of your members in bringing problems to light and attempting to find solutions for them.

I have, therefore, prepared my comments in the belief that, where indicated, a frank statement will be considered solely as an effort to assist in the advance toward your purposes and objectives. You will be aware, of course, that I have no technical competence in the field of your specialty; nor do I have the temerity to invade it. My comments are related in part to my experiences as an official of the American Dental Association and in part to my personal interest in the continued progress of the dental profession and its specialties.

THE DIMENSIONS OF THE SPECIALTY

In order to put parts of my discussion into proper perspective, I propose briefly to explore some of the vital statistics regarding the specialty of orthodontics.

Growth in Number of Orthodontists.—In 1952 there were 1,251 orthodontists of record. In 1958 there were 1,925, an increase of 674, or 53.9 per cent. The average annual increase in the number of orthodontists was 112, or 7.5 per cent. This compares to an annual increase of 8.2 per cent in the number of oral surgeons, 14.5 per cent in the number of pedodontists, 6.6 per cent in the number of all specialists, and 1.7 per cent in the number of all dentists. This indicates that the specialty is having a healthy growth, although the growth may need to be accelerated to meet rapidly increasing needs and demands.

If the number of orthodontists continues to grow at the annual rate of 7.5 per cent, by 1969 there should be approximately 4,200 orthodontists as compared to 1,925 in 1958. This indicates that in 1969 orthodontists will constitute 4.1 per cent of an estimated 103,000 dentists as compared to the present 2.1 per cent of 91,000 active dentists.[3] It is not at all clear, however, whether the estimated number of orthodontists in 1969 will be sufficient to meet an increasing demand from an increasing national population. Consideration may need to be given to a continuing program of recruitment to the specialty comparable to the recruitment program for dentists which is already under way as a project of the American Dental Association.

Distribution of Orthodontists.—It is always difficult in discussing health personnel to determine whether there is a real personnel shortage, maldistribution, or both. On the basis that all people in the United States, regardless of income or geographic location, should have access to orthodontic services, I am quite certain that there is a maldistribution at the present time (Table I). The number of orthodontists ranges from two each in Vermont and New Hampshire to 279 in California and 286 in New York. Delaware, Idaho, Wyoming, and South Dakota have three each; Nevada and North Dakota have four each; New Mexico has five; Arkansas, Maine, and Montana have seven each.

TABLE I. NUMBER OF ORTHODONTISTS AND POPULATION FOR CERTAIN STATES AND THE UNITED STATES, 1958

STATE	NUMBER OF ORTHODONTISTS*	POPULATION PER ORTHODONTIST	ESTIMATED POPULATION†
Arkansas	7	254,186	1,779,300
California	279	51,184	14,280,400
Delaware	3	137,233	411,700
Idaho	3	211,200	633,600
Maine	7	130,600	914,200
Montana	7	94,200	659,400
Nevada	4	63,225	252,900
New Hampshire	2	282,450	564,900
New Mexico	5	171,680	858,400
New York	286	57,357	16,404,100
North Dakota	4	159,075	636,300
South Dakota	3	226,700	680,100
Vermont	2	187,750	375,500
Wyoming	3	107,867	323,600
United States	1,925	89,348	171,994,400

*Based on listings in the 1959 *American Dental Directory.*
†*Sales Management,* May 10, 1958.

As I have just indicated, however, an absolute shortage is not revealed by the citation of the number of orthodontists in the state. The number must be related to the state's population in order to clarify the situation. Thus, we find that New Hampshire, with two orthodontists, has a ratio of one orthodontist for every 282,000 persons, the highest ratio in the country. Arkansas, on the other hand, with seven orthodontists, has the second highest ratio: one orthodontist for every 254,000 persons. Interestingly, Montana, also with seven orthodontists, has the much lower ratio of one orthodontist for every 94,000 persons. It is clear, therefore, that the specialty faces rather acute problems in the distribution of its services, and these may be insoluble for some time if an absolute shortage of orthodontists really exists.[4]

Number of Cities Having Orthodontists.—The distribution of orthodontists can be measured in another way. In 1955 there were orthodontists in 506 cities of the United States, and in 1958 660 cities in the United States had orthodontists. This shows that about fifty new cities a year acquire the services of an orthodontist. At this rate of growth, by 1969 about 1,160 cities in the United States should have the services of at least one orthodontist.[3] Here again the data must be analyzed with caution, for modern transportation has made the presence of an orthodontist in cities of certain size an unreliable index

to optimal distribution. It would seem safe to say, however, that the annual growth in this area should be maintained and, if possible, accelerated.

Age of Orthodontists.—The age of orthodontists is also a considerable factor in determining whether the specialty is having satisfactory growth. As the age of the practitioner increases, it is likely that his patient load will show some decrease and thus diminish the amount of orthodontic service available to the public. The average age of orthodontists is about the same as the average age for all dentists. The proportion of orthodontists below 35 years and over 65 years is lower than that of all dentists, and there are obvious explanations for this situation.

Seventy-one per cent of all orthodontists are under 54 years of age, and 29 per cent are over 54; 8.6 per cent of orthodontists are 65 years of age or older.[5]

Income of Orthodontists.—The income of orthodontists is also of interest, for it provides a good clue to the total volume of service and is an important factor in attracting practitioners to the specialty. As Dr. Graber indicated, statistics can frequently be misleading; this truism applies especially to statistics on income, particularly those which deal with mean or average figures. In addition, income studies are difficult to maintain on a current basis, with the result that the latest data available are for the year 1955.[6] In that year, the average net income of all dentists was $12,241.00, or about 16 per cent more than reported in a similar survey in 1952. It would seem reasonable to suppose that a similar increase has been applied during the years from 1956 to 1959. Nonsalaried orthodontists reported a mean net income of $22,130.00, followed by oral surgeons ($16,949.00), pedodontists ($16,027.00), and general practitioners ($12,000.00). Thus, it is clear that the orthodontist enjoys an income above that of other specialists and substantially above that of the general practitioner.

If we take all these factors and place them against the background of national population growth, it is difficult to avoid the conclusion that there will be an absolute shortage of dentists and orthodontists by 1969 unless steps are taken now to increase the supply. According to Moen,[7] the population will grow by 27 million between now and 1967, and this increase will be equivalent to the total present population of Illinois, Indiana, Ohio, and Wisconsin. By 1967 "the number of children under 10 years of age will increase about 7 million or 19 per cent. The largest increase in population will come in the age group 10-19, which is expected to increase by about 13 million or 53 per cent."

This problem is one of the most serious ones which confront the dental profession and your specialty, and it will take a maximum effort to provide the resources which will ensure sufficient personnel to meet mounting needs in the next ten years.

THE SPECIALTY AND THE PROFESSION

I think that we can readily agree that the problem just examined is one which should concern both the dental profession and the specialty of orthodontics. In more concrete terms, this problem should be of mutual concern to

the American Dental Association and to the American Association of Orthodontists. If this reasoning is correct, there should be close liaison between the two associations if all resources are to be applied and if the solutions are to be mutually beneficial. I think that the liaison which presently exists is defective in that it is both fragmentary and sporadic. I have little interest in assigning responsibility for this defective liaison, for it likely falls on both associations; I do have an interest in any program which will improve it.

Since I am sure that many of you will be delighted to point out possible failures of liaison on the part of the American Dental Association, I will not take time to make my personal observations. I can assure you, however, that every attention will be given to the correction of existing problems. In turn, I would like leave to comment on some matters to which I believe your specialty and your association should give attention.

Many orthodontists do not always freely acknowledge that they are, first, members of the dental profession and have some obligations to it; nor do all of your members always freely acknowledge that they are members of the American Dental Association and have some obligations to it. By no means is this a defect of your specialty only; it appears to be more or less common to all.

I think that too many specialists become so preoccupied with their own narrow area of practice that they fail to relate their programs and work, both individually and collectively, to the problems and work of the whole dental profession. This has given rise to some division between the specialists and the body of the profession. Increasingly, some of the specialties in dentistry are hearing the epithets "cultism," "country-clubism," "isolationism" and "provincialism." I have no intention of assessing the value of each of these epithets, but I do think that their continued and increasing use cannot but be detrimental to the specialty, to the profession, and to both associations. In my view, these epithets arise in part out of the fact that too many specialists do not take their proper role in the activities of the component, constituent, and national dental societies. Too many are not aware, for example, how the House of Delegates of the American Dental Association operates and how important it is for a specialty to have its views correctly reflected when legislation is being undertaken for the dental profession. Too many specialists are unwilling to participate in the scientific programs of their dental societies, and they thus reinforce the contention that they wish status apart from the general practitioner and the profession. Too many specialists also manage to convey the impression that the general practitioner is a second-rate citizen and that dental societies in general exist only to plague the specialist with restrictions, requirements, and rules.

Some of these comments, of course, are hypercritical and you may evaluate them as you will. But permit me to make two points which, I think, will reveal a trend which should not be continued.

The last official liaison that your association, to my knowledge, had with the American Dental Association, apart from your relations with the Council on Dental Education, occurred when there was a question of restraint of trade

in connection with dental laboratories advertising orthodontic appliances. At that time the Association offered its facilities and, in addition, made the sum of $10,000.00 available for use in possible litigation. When the crisis was successfully passed, close liaison with the Association became a matter of history.

I am quick to admit that such occurrences in the past have not been deliberate; they have occurred simply because you were busy with your own concerns and, more important, because you were not organized to take your working place in the dental profession.

At the risk of wearing my welcome thin, I would like to make two wholly gratuitous suggestions, and I hope you will know that these arise out of my wish to strengthen every element of the dental profession.

The time is past when all critical dental problems can, or should, be left to the American Dental Association. The interests of the dental profession are now so complex and so multifold that each segment, having an identity of its own, must bear its part of the work and of the responsibility. I have two suggestions.

First, your association has reached such maturity that it must have continuing administration, for only in this way can day-to-day attention be given to your affairs without imposing unduly heavy burdens on the already overburdened shoulders of your volunteer workers. The tasks that you impose on your officers and committees are heavy and, in my view, unfair. The association should make provision for removing the routine tasks of correspondence, record keeping, and program planning so that your dedicated officers can give their attention to the more important problems of long-range planning for the specialty and for integrating the activities of the specialty with those of the dental profession. This can be done only by the establishment of a small, paid staff under the direction of your officers. In the past year, the American Association of Dental Schools, the American Society of Oral Surgeons, and The Fund for Dental Education have yielded to the necessity of having a paid central office staff. The American Dental Hygienists' Association, the American Dental Assistants Association, and the National Association of Dental Laboratories have maintained offices for some years. I do not believe that your association can discharge the full measure of its obligations without moving in the same direction in the very near future.

Only when you have taken this step will your officers and your committees be free of the routine burdens and able to consider and implement the second suggestion which I venture to make: the development of a continuing, planned program of public and professional relations for the specialty of orthodontics integrated with the public and professional relations program of the dental profession. This should have high priority in the activities of your association if you are to counteract the adverse opinions which you presently confront, if you are to pull your weight in the development of the specialty program in dentistry, if you are to meet the need for a long-range program, and if you are to have your proper voice in the development of the important and essential

programs of the dental profession in this country. I am sure that your association has both the maturity and the foresight to undertake this important step in the very near future, for without it your progress will be halting and intermittent, thus imposing an unnecessary penalty on your specialty and on your profession.

ORTHODONTICS AS A SPECIALTY IN DENTISTRY

In the past few years, many members of the dental profession have manifested a deep concern about the multiplication of specialties in dentistry, with the resultant fragmentation of professional interests and service to the patient. As yours was the first specialty to establish a specialty board, I assume that this trend is of interest and concern to orthodontists as it is to the American Dental Association. Last year the House of Delegates of the American Dental Association requested the Council on Dental Education to give immediate attention to this problem and to report its recommendations at the 1959 session.

An examination of the problems of specialization in dentistry reveals these major problems: (1) if the multiplication of specialties continues without interruption, the status of the specialist in dentistry will be jeopardized, if not destroyed; (2) specialties are established in dentistry and other professions for the one principal objective of safeguarding the health of the public; (3) specialties should not be established for the principal purpose of enhancing the status of any group in dentistry; (4) the essence of specialization in dentistry is the full-time limitation of practice; (5) advanced study in every field of dentistry should be encouraged wholeheartedly, but the mechanism of a specialty should not be used for this purpose; (6) the ethical principles, applicable to the specialist, become operative only when the practitioner "holds himself out to the public" as a specialist and not automatically when he acquires advanced education in a particular field; (7) the status of diplomate is not necessarily identical with the status of a specialist; (8) educational opportunities for the development of specialists in the United States are as yet limited and require immediate and widespread development; (9) educational qualifications for specialists in dentistry need restudy and restatement and perhaps codification on a uniform basis; (10) specialty boards in dentistry are in need of common standards of administration; (11) closer and formal liaison is needed between the educational agencies of the profession and the specialty boards and societies; (12) true specialties require education and skills, a body of knowledge and research beyond the level of the undergraduate student in dentistry; (13) apprenticeship must eventually disappear as a recognized means of training specialists and be replaced by formal education at the appropriate level.

It is recognized that these problems cannot be solved by sweeping, radical changes in the present system, but it is also recognized that it is imperative that an effort be made for their solution. In the next few months, the Council on Dental Education will seek the cooperation of your specialty in discussing these problems with a view to presenting appropriate recommendations to the House of Delegates at the 1959 session in New York. These recommendations,

in essence, will ask that further fragmentation of the profession be halted and that plans be made for the orderly and consistent recognition of specialties in the future. It is my hope that the specialty of orthodontics, which has led the way in the development of specialties in dentistry, will cooperate wholeheartedly in this program to the end that the standing of specialists and specialties will not be reduced to a level which has no significance and no real opportunity for service to the public.

PROBLEMS OF ORTHODONTICS AND DENTISTRY IN THE NEXT TEN YEARS

The problems which I have just cited are, of course, the major ones which both orthodontics and dentistry must face in the next ten years, but there are many other problems on the horizon which require an effective dental profession and an effective orthodontic specialty. It is not possible to separate these two interests, for, willy nilly, the future of orthodontics as a specialty is integrally related to the future of dentistry as a health profession.

Government and Health.—I use the phrase "government and health" rather than the more popular term "socialization" for several reasons. First, the word "socialization" has many emotional overtones and is not accurately descriptive of the general problem that I wish to discuss. Second, many areas of health service have already been "socialized" and some of these programs are wholly desirable (for example, in the strictest sense, dental health education programs are a form of "socialization" and I am unable to find an objection to them). Third, there is a need to distinguish between "socialization" in bits and pieces and "socialization" in the form of a national program, such as exists in Great Britain. I do not think that we need have present concern with the latter, but I do think we should concern ourselves with the former.

At the present time there are twenty-three agencies of the Federal Government which have responsibilities of some sort for matters of health. The Federal Government is spending about $2.5 billion annually for activities related to health, and one out of four persons in the United States is entitled to some form of Federal health benefits.

In the current fiscal year, the Public Health Service will spend $750 million; the Veterans Administration, $815 million; the Atomic Energy Commission, $43 million; and the Defense Department, $325 million—all for activities related to health.

There is no doubt that expenditures of this type will increase for the predictable future, and the health professions must be alert to the programs which are developed and expanded by these appropriations.

The Congress is presently considering several Forand-type bills which would provide hospitalization and other health benefits to all beneficiaries of the Old Age and Survivors Insurance program. If enacted, such a program will be directly applicable to more than fifteen million beneficiaries, regardless of their ability to provide some or all of their needed health services for themselves. This is dangerous legislation, for, once enacted, extension of the

program to include all health benefits would appear to be inevitable and the country would be well on the way down the road which Great Britain has traveled.

A "Medicare" program to provide health services for the dependents of military personnel has been in operation for some years, and attention is presently being given to the development of a "Denticare" program under which the Federal Government would provide approximately $85 million additionally each year for treatment programs.

The Congress is presently considering a program to provide hospitalization and other health benefits for all Federal employees, thus bringing additional millions under health coverage financed by the Federal Government.

The Federal Government in recent years has displayed an increasing interest in various aspects of professional education and research in the health professions. The extent to which these programs should be expanded is a critical issue, for surely there is some point at which Federal expenditures will be so large and controlling that they will eliminate or impair the programs of our voluntary agencies and institutions.

Methods of Practice and Payment.—This is a time of ferment in the development of methods of practice and payment in dentistry, and the profession, whether it likes it or not, must give attention to the social needs and demands which are creating new patterns in the practice of dentistry.

Postpayment plans are being developed in an increasing number of communities and apparently are successfully meeting the needs of a part of the public in budgeting payments for dental care. In the area of prepayment programs—such as the Blue Shield program—the provisions for dental care have lagged both because of the nature of dental diseases and defects and because of the actuarial and financial dangers lurking in providing protection against an almost universal risk. The picture is optimistic, however, and it is almost certain that within the year there will be one or more experimental prepayment programs in dentistry under the auspices of commercial insurance carriers. The provision of orthodontic treatment under prepayment plans is a difficult technical problem and one which needs high-priority study by your specialty if it is not to be entirely excluded as a noninsurable risk. I strongly believe that this should not be allowed to happen and that intensive research and experimentation will develop some mechanism under which orthodontic treatment can be provided on a sound basis as a prepayment benefit.

The development of group practices and the attention being paid to orthodontics in public health and labor-management programs should also be of interest to orthodontic practitioners. The dangers inherent in most "closed panels," as we know them today, should be carefully watched, for the multiplication of these panels can have an adverse effect on the practice of dentistry and orthodontics.

Research.—The present is also a time of unexampled research in dentistry, and a proper share of available funds should be used to study problems in the area of orthodontics. I believe that excellent work is going on in the technical

side of your specialty and that the science and art of orthodontics are making good progress. I think, however, that many areas remain to be explored, particularly in the administrative and social areas which touch upon orthodontics. There is a great need for time and motion studies and for an analysis of pricing formulas so that these valuable data will be available in the development of prepayment and insurance programs. If there is an absolute or relative shortage of orthodontists now or in the future, it will be important to use auxiliary personnel to the maximum and this, again, is an area which needs intensive study and research.

Dental Health Education and Public Relations.—In this centennial year, the American Dental Association, with the cooperation of many agencies, has developed an extensive public relations program involving all phases of dental health education. This program should be sustained on a permanent basis for the purpose of improving "the image" of the American dentist and the value of dental services in the mind of the public. Your association should have a real role in all such programs, for the services of your specialty touch so vitally upon the health of the younger age groups.

Intra- and Interprofessional Cooperation.—The dental profession and your specialty both have a need to develop intra- and interprofessional relations programs on a permanent basis. I have spoken previously of the problems within the profession, and I wish to emphasize the need to develop closer relations with other members of the health team.

Some of the problems that dentistry faces cannot be solved without the close collaboration of our colleagues in the fields of medicine and hospital administration. Your specialty should have close relations with pediatric specialists in medicine, for this association must be strengthened if the total health of our children is to be served better.

CONCLUSION

These, then, are some of the problems that we all face as dentists at the beginning of the second century. Their solution will require the best efforts of the general practitioner, the specialist, the educator, and the administrator. I am appreciative of the opportunity which you have given me to discuss with you some of the broader problems of the dental profession, and it is my hope that your continuing help can be enlisted in their solution.

It is only by the sustained and united efforts of all members of the dental profession that, in the second century, the American Dental Association can enlarge its contributions to the three freedoms it provides and safeguards for the people of this country: freedom from pain, freedom from disease, and freedom from disfiguration.

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222 E. Superior St.

ALBERT H. KETCHAM MEMORIAL AWARDS

THE purpose of an association such as ours is usually twofold: First, to meet and exchange ideas through our lectures and clinics and, second, to have a social time, meet old friends, and make new friendships. In the American Association of Orthodontists, however, we have added several other functions, notably that of the Research Section. Some thirty years ago, stimulated by Dr. Albert H. Ketcham, the American Board of Orthodontics came into being. Thus was created another function of our Association, the certifying of its members. After Dr. Ketcham's death in 1935, some of his close friends were instrumental in establishing the Albert H. Ketcham Memorial Award, the purpose of this award being to honor outstanding members of the American Association of Orthodontists at our annual meeting.

Representing the American Association of Orthodontists and the American Board of Orthodontics, I now have the pleasure of presenting two such awards —one to Dr. Robert H. W. Strang and the other to Dr. Allan Gibson Brodie. While both of these men have contributed to our profession in the fields of practice and research, they are perhaps better known for their contributions in the field of education. To enumerate their many accomplishments would consume more time than has been allotted by the Program Committee. However, a biographical sketch of each recipient of this year's Ketcham Award and a list of his principal published contributions is appended to the presentation of the respective awards.

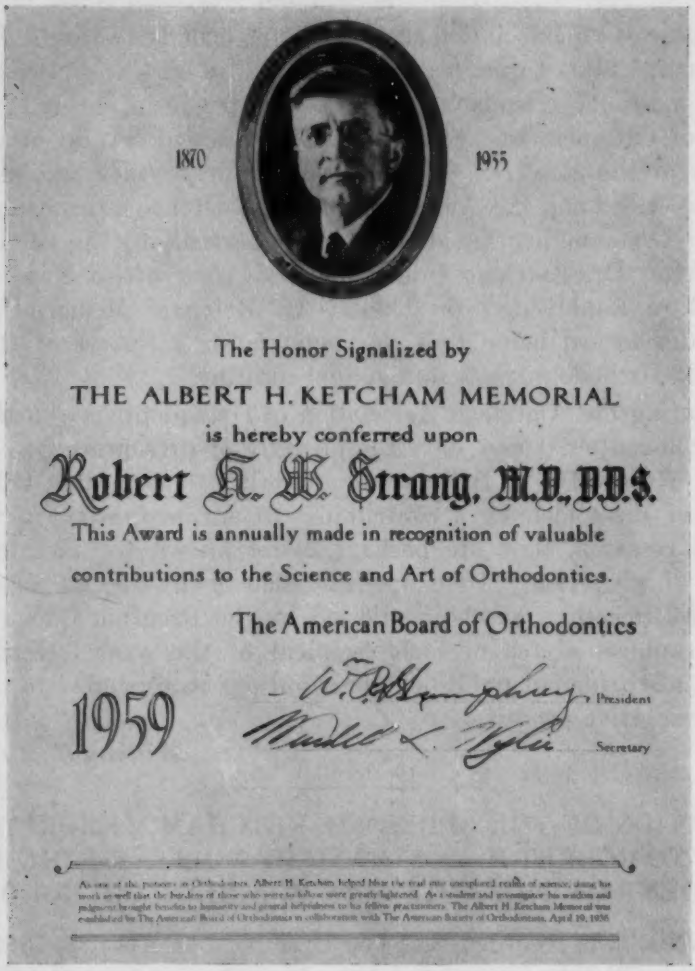
William R. Humphrey

PRESENTATION OF THE ALBERT H. KETCHAM MEMORIAL AWARD FOR 1959 TO ROBERT H. W. STRANG BY WILLIAM R. HUMPHREY, PRESIDENT OF THE AMERICAN BOARD OF ORTHODONTICS

DR. STRANG, it is recorded that you were born on Feb. 22, 1881, the son of Dr. Clinton Wright Strang and Ella Jane (Lewis) Strang. You attended Wilbraham Academy in Massachusetts. You received your D.D.S. degree from the University of Pennsylvania in 1902, your M.D. degree in 1904, and your certificate from the Angle School of Orthodontia in 1906.

Dr. Strang, you have, indeed, dedicated your life to orthodontics, and your service has continued longer than that of most members. Your contemporaries were the fathers of our profession. Many, including Dr. Ketcham, have gone on to their reward. It has been your pleasure to work with all the modern appliances, from the E arch through the pin-and-tube appliance, the ribbon arch, and the edgewise appliance. You have always had the ability to adapt yourself to changing times and conditions. The many hours that you have spent writing your books and articles are evidence of your devotion

to orthodontics. Your enthusiasm and perpetual drive have been an inspiration, not only to your students but also to all who come in contact with you. Although you are a member of our Golden Anniversary Group, you still had the energy to fly down to Rio last summer and spend two weeks teaching a course in orthodontics.



ALBERT H. KETCHAM MEMORIAL AWARD CONFERRED UPON DR. ROBERT H. W. STRANG

Dr. Strang, you have our admiration and affection, and it is with pleasure that I present you with the Ketcham Award.

ROBERT HALLOCK WRIGHT STRANG

Biographical Data

Born: Feb. 22, 1881.

Parents: Dr. Clinton Wright Strang and Ella Jane (Lewis) Strang.

Education: Wilbraham Academy (Massachusetts), 1897-1899; D.D.S., Pennsylvania, 1902; M.D., 1904; postgraduate training at Angle School of Orthodontia (St. Louis), 1906.

Married: Mary E. Dunlap, June 1, 1909. Children, Marjorie Dunlap and Clinton Wright II.

Second marriage: Ruth Hancock, March 15, 1922. Children, Ruth Hancock and Dorothy Roberta.

Dental Career: Began as an intern at Western Pennsylvania Hospital, Pittsburgh, Pennsylvania, 1904. Practiced dentistry in Bridgeport in 1905. Specialized in orthodontics since 1906. Was the first specialist in orthodontics in the state of Connecticut. Lectured in orthodontics in extension courses at Columbia University, 1936 to 1946, 1947, at the University of Toronto, and Temple University, 1948-1959. Founder and director of Strang Post Graduate School of Orthodontia. Appointed oral surgeon at Bridgeport Hospital, 1906. Director of Fones School of Oral Hygiene, University of Bridgeport. Received Alfred C. Fones Memorial Medal, Wilbraham Academy Alumni Award, Bridgeport Dental Society Award; Rio de Janeiro Orthodontic Society Award. Member of Medical Advisory Board of State of Connecticut. Author of The Textbook of Orthodontics, first edition 1933; fourth edition, 1958. Associate editor of *Angle Orthodontist.*

Church: Methodist.

Organizations: Delta Sigma Delta fraternity, American Dental Association, American Medical Association, American Association of Orthodontists, Northeastern Society of Orthodontists, Edward H. Angle Society of Orthodontia, Eastern Component of the Angle Society, Charles H. Tweed Research Foundation, Connecticut State Dental Association, Toronto Dental Society (Honorary Member), Rio de Janeiro Orthodontic Society (Honorary Member).

Social Organizations: Brooklawn Country Club; University Club of Bridgeport.

Contributions to Literature:

Listed below are the books and articles that Dr. Strang published from 1906 through 1958. We have attempted to make this list as accurate and as complete as possible. You will note that certain references are to discussion of papers; we have indicated these by just listing the publication and date rather than the title of the paper being discussed.

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RESPONSE BY ROBERT H. W. STRANG TO THE PRESENTATION OF THE ALBERT H. KETCHAM MEMORIAL AWARD

THERE are times when words are inadequate to express one's feelings, and this is such an occasion.

When professional activities have been a great source of happiness, both thrilling and stimulating, a sustaining power and comfort in times of depression, a source of service to others, and a means of gaining innumerable friends, all of which facts apply to me, I cannot help but wonder why I have been selected to receive the honor that you are bestowing upon me today. It is a tribute that is received with deepest gratitude and humility.

Most of us, at some period of our career, have been in contact with individuals who have exerted considerable influence upon our future development. In my case, there were two persons whose guidance and advice were so valuable that never can I possibly discharge my obligations to them. One of these was my father. He also was a dentist and practiced his profession for over fifty years.

Dad was an idealist and a perfectionist in his work. Deep rooted in his mind was the rule that his patients' welfare was primarily to be considered. He was especially interested in and considerate of the careers of the younger practitioners in the profession. Extremely kind and good-natured, he was also a good disciplinarian when occasions required such action, as was frequently true in my case. Discipline was administered with physical exertion on his part and with stinging effect on certain of my parts.

Graduating from the old Philadelphia Dental College approximately 100 years ago, he continuously kept pace with all advancements that were made in dentistry in succeeding years. Furthermore, his vision of future developments in his profession was keen and accurate, as I can well attest by the advice given to me when he learned that I had decided to take up dentistry. This was in 1899. I can still hear his words today as he said, "Son, I have always felt the need of a medical degree, and if you are going to take up dentistry, I want you also to study medicine. If you will do this, I will provide the finances to see you through."

At that time the University of Pennsylvania offered a combined course of five years' duration for the two degrees. I took this course with the intention of practicing oral surgery. It was a pretty stiff course because it was necessary to take two years of the medical curriculum during the three years of the dental course. Then, after graduating in dentistry, one had two years more in which to complete the medical course. However, I managed to survive and the knowledge gained has, of course, been of extreme value.

I interned for a year in the West Penn Hospital in Pittsburgh and then came back to Bridgeport, took the medical and dental state board examinations for license, and started to practice oral surgery and general dentistry. I soon found that I was not enthused with such a practice and talked the problem over with Dad, in whose office I was located. Again his advice and farsightedness entered the picture. I quote his words: "I think there is a great future in orthodontia as a special field, but if you go into it you must study with the outstanding man in this field, and that is Dr. Angle." I again followed his advice and, as a result, came in contact with the other saintly man whose influence and guidance have been a stimulating and sustaining force throughout the fifty-three years of my specialization in orthodontics.

As some of you here today well know, Dr. Angle was a stern taskmaster and would not tolerate any variation from his viewpoints and teachings. I can today hear him say, "Hew to the line; there is only one best way. See the gate before you make it." Our specialty was his life's love; he cherished

it as a parent does his child, and woe be unto anyone who, in his judgment, by word, thought, or deed, was trespassing on the hallowed ground that he had cultivated.

Because of this caustic defense mechanism, Dr. Angle severed many friendships, but to those who weathered these storms and maintained close contact with him, it was quite evident that these outbursts were not so much of a personal nature but were really expressions of resentment against procedures that he believed were harmful to the high ideals that he was teaching and developing for the advancement of our specialty.

I am quite sure that there never was a single student of Dr. Angle's who did not, at some time in his career, receive the most devastating dressing down that he ever encountered in his life. I got mine in due season, and I will never forget it.

DR. ROBERT H. W. STRANG

As I look back upon this routine custom of Dr. Angle's, I am convinced that it was a deliberate and purposeful procedure, used as a test to see whether the recipient had tenacity enough to fight back with an "I'll show you" reaction or whether he would become resentful and antagonistic. Admittedly,

it was a severe test. In spite of this domineering attitude, however, Dr. Angle had the ability to instill into the make-up of the majority of his students an everlasting enthusiasm and a compelling drive that made work a pleasure and progressive improvement a necessity.

I have mentioned my relationship to these two men somewhat in detail because whatever I have given in service to our specialty has been, to a great degree, instigated by a desire to repay, in proportion to my ability, the great indebtedness that I owe to them. Hence, I feel that the honor that you are bestowing on me today should, in justice, be transferred to them. I know that I would never have received this recognition had I been denied their inspiring influence and wise guidance.

I would also be most remiss and ungrateful if I did not acknowledge my indebtedness to the numerous associates in our profession who have contributed to my advancement by their research deductions and clinical contributions. I frankly state that I have made few original contributions to our specialty. I have only been privileged to disseminate, through the agencies of teaching and writing, the material that I have gathered from these gifted and generous persons, many of whom are with us today. Foremost among these associates is my friend of many years, whom you are also honoring today, Allan G. Brodie. I am glad to have this opportunity to publicly express my gratitude to him and to offer my congratulations for the honor that you are conferring upon him and which he so justly deserves.

To one who has been in the practice of orthodontics for fifty-three years, the progressive advancement of our specialty, both in scientific principles and clinical achievements, is viewed as quite phenomenal. For many years we older men were obliged to work under trial-and-error methods. Errors were quite in evidence, and often we had no way of ascertaining the cause of these mistakes. The dominance of growth patterns was not a governing factor in our treatment procedures, for we knew nothing about such stimulating or limiting factors. The influence of function upon bone growth was the false theory under which we labored. Credit for the comparatively few stabilized results that we obtained was given to appliance therapy and functional stimulation and not to inherent and associated growth activities.

To the best of my knowledge, the first one to call our attention to the coordination of growth activities with results produced in orthodontic treatment was Milo Hellman. In a paper published in the March, 1927, issue of the *Dental Cosmos,* Dr. Hellman presents the following question: "Are these changes (in the case illustrated in the beginning of the paper) entirely due to orthodontic treatment?" In answer to this question will be found a most detailed report of his research deductions concerning the growth of the face in the three dimensions of space. He emphasized the fact that there were periods of acceleration and periods of retardation in the process of facial growth. He established the period in denture development when the greatest percentage of growth occurred. It is truly remarkable how closely his deductions are coordinated with the data that are now attainable from living persons by means of cephalometric appraisal.

This was a remarkably forward step in basic scientific principles in our specialty but, as is the case with many important and advanced contributions, the value and accuracy of Hellman's research deductions were not recognized or appreciated by many of his associates of that period. Most of us continued to give all credit for improvements made in treatment to the action of the appliances and to the stimulation obtained from more efficient functional force.

It remained for B. Holly Broadbent, by his outstanding contribution of facial growth analysis on living children, to focus the attention of our specialty upon this very fundamental and important phenomenon.

Primarily purely a research procedure of extreme value, it was transferred into a most helpful and essential clinical aid, first by William Downs, and subsequently by many other contributors.

Concurrent with these scientific contributions was the great improvement in the efficiency of appliances for the movement of teeth, especially as related to control over root as well as crown positioning. This, of course, was Dr. Angle's greatest contribution.

Blessed, indeed, are those of us who have been spared to continue active practice until these present-day advancements had materialized. How fortunate are the young men now entering this special field to have at their command this sound basic training and these efficient technical procedures! We congratulate them, and we are certain that this advancement in orthodontics will not cease, for there are those among them who are endowed with the ability and incentive for research. There are others who can and will evolve technical improvements for treatment procedures.

Although such gifted persons are destined to be the leaders and teachers in years to come, it must ever be borne in mind that the reputation of the specialty, as far as the public is concerned, is judged by the integrity of the individual practitioner. This places every single practitioner in the specialty on an equal footing with those who lead and teach. It is a personal trust and a responsibility to the welfare of orthodontics that prohibits violation.

The honor that you have conferred upon me is received as a powerful incentive to be ever more worthy of this tribute. I am deeply touched and reverently dedicate myself to continued service in our chosen field of activity.

PRESENTATION OF THE ALBERT H. KETCHAM MEMORIAL AWARD FOR 1959 TO ALLAN G. BRODIE BY WILLIAM R. HUMPHREY, PRESIDENT OF THE AMERICAN BOARD OF ORTHODONTICS

DR. BRODIE, according to the record, you were born in New York City on Oct. 31, 1897. You attended public schools in New Jersey and received your D.D.S. degree from the University of Pennsylvania in 1919. You received your certificate from the Angle School in 1926. You received your M.S. in anatomy from the University of Illinois in 1934 and your Ph.D. in anatomy from the University of Illinois in 1940—a truly remarkable background.

It is not strange, therefore, that you were among the first members of our profession to want to know the truth. You were among the first to demand a scientific approach to orthodontic problems and to seek out the facts. Your interest in research, both personally and through your students, has brought prestige to our profession. However, it is my opinion that through your students you have reached your greatest stature. You have the ability to make them think for themselves. As a result of your inspiration, a large majority of your students have become leaders, and through them you have benefited many hundreds whom it will never be your privilege to know. Dr. Brodie, your life is a perfect example of the old saying: "A doctor has no excuse to be other than a perpetual student."

May I congratulate you and with pleasure present you with the Ketcham Award.

ALLAN GIBSON BRODIE

Biographical Data

Born: New York, New York, Oct. 31, 1897.

Present Position:

Professor of Orthodontics and Head of Department, University of Illinois College of Dentistry.

(Dean, University of Illinois College of Dentistry, 1944-55.)

Academic Degrees:

D.D.S., Thomas W. Evans Institute and Museum, University of Pennsylvania School of Dentistry, 1919.

Certificate, Angle College of Orthodontia, 1926.

M.S., University of Illinois (anatomy), 1934.

Ph.D., University of Illinois (anatomy), 1940.

(Thesis: "On the Growth Pattern of the Human Head From the Third Month to the Eighth Year of Life," Am. J. Anat. 68: 209-262, 1941.)

Memberships:

Chicago Dental Association, Illinois Dental Association, and American Dental Association.

Chicago Institute of Medicine (Fellow, past member of the Board of Governors).

American Association of Anatomists.

American Association for the Advancement of Science (Fellow).

Edward H. Angle Society of Orthodontists (Secretary, 1930-53).

American Association of Orthodontists (Chairman, Research and Education Committees).

Chicago Association of Orthodontists (past president).

International Association for Dental Research (past president).

Society for Research in Child Development.

Sigma XI.

Omicron Kappa Upsilon.

Xi Psi Phi.

University of Pennsylvania Club of Chicago (past president).

Chicago Odontographic Society.

Membership on National Committees:

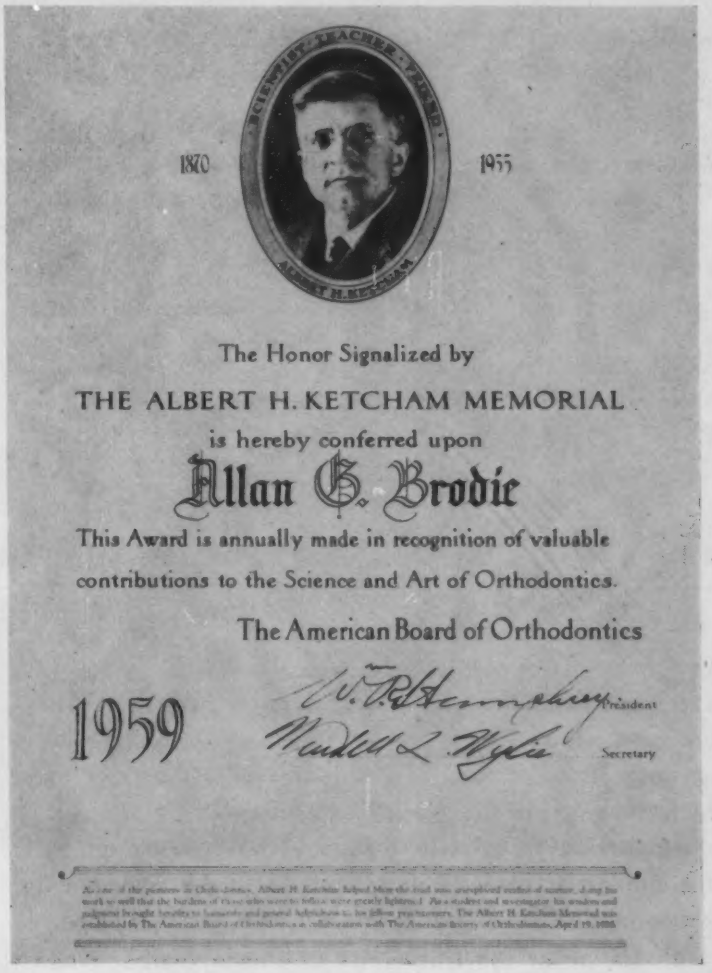
Committee on Growth and Development, National Research Council.

Dental Study Section, National Institutes of Health, United States Public Health Service.

Dental Consultant, Veterans' Administration.
Selection Committee, Senior Research Fellowships, National Institutes of Health.

Listings:

Who's Who in America.
American Men of Science.
Who's Who in American Education.
Who's Important in Medicine.
International Blue Book.



ALBERT H. KETCHAM MEMORIAL AWARD CONFERRED UPON DR. ALLAN G. BRODIE

Honors and Recognitions:

Certificate of Merit from American Medical Association for Scientific Exhibit on Endocrines and Teeth, 1935.

Orthodontic Delegate from the United States to the Ninth International Dental Congress in Vienna, 1936.

Edward H. Angle Memorial Lecturer, 1940.

George Villain Prize, Laureate, 1947, Fédération Dentaire Internationale.

Seibold Memorial Lecture, New York Academy of Dentistry, 1947.
Alumni Award of Merit, University of Pennsylvania, 1951.
Honors Day Speaker, University of Illinois, 1952.
Joske Memorial Orator, Melbourne, Australia, 1954.
Certificate of Merit from Odontographic Society, Chicago, April, 1957.
Callahan Commission Award of the Ohio State Dental Association, October, 1957.

Clubs:

University Club of Chicago.

Publications:

Chapter on "Biologic Aspects of Orthodontia" in Gordon, Samuel M. (editor): *Dental Science and Dental Art,* Philadelphia, 1938, Lea & Febiger.

Chapter on "Orthodontics" in Grossman, L. I.: *Handbook of Dentistry,* Philadelphia, 1948, J. B. Lippincott Company.

Monograph: *The Temporomandibular Joint* (Chapter III. Contribution of Mandibular Condyle to the Growth of the Face), Springfield, Ill., 1951, Charles C Thomas.

Chapter on "Craniometry and Cephalometry as Applied to the Growing Child" in Cohen, M. M.: *Pediatric Dentistry,* St. Louis, 1957, The C. V. Mosby Company.

Articles and Research Reports:

Over 70 publications in J. Am. Dent. A., Angle Orthodontist; Dental Cosmos; J. D. Res.; Am. J. Orthodontics; Am. J. Anat.; Am. J. Dis. Child.; J. Pediatrics; J. Canadian Dent. A.; D. J. Australia; J. D. Educ.; Surgery; Oral Surg., Oral Med. & Oral Path.; Anat. Rec.; J. Oral Surg.; and others.

Supervision of over 50 theses for Master of Science degree, Graduate College, University of Illinois.

RESPONSE BY ALLAN G. BRODIE TO THE PRESENTATION OF THE ALBERT H. KETCHAM MEMORIAL AWARD

THE Ketcham Award could well be considered the capstone of the career of any American orthodontist. I consider it so since it is bestowed by my peers, the men with whom I have worked the past thirty-five years. I believe, however, that no man with even a shred of modesty in his make-up can receive it without sharing in the feeling once voiced by Newton: "If I have been able to see farther, it is only because I have stood on the shoulders of giants." In a similar attitude, I am impelled to acknowledge my debt to all those who have contributed so heavily to my own puny stature.

As a dental student at the University of Pennsylvania, I had the privilege of knowing such men as Piersol and Hopewell-Smith. I was no great shakes as a student, but I have come to realize over the years that from each of these men I gained something valuable. I see Piersol yet, lecturing with eyes closed and painting pictures so vividly with words that he might have been drawing what he was talking about. And kindly old Hopewell-Smith, although he failed utterly in teaching me the difference between an osteoblast and an osteoclast, did intrigue me mightily in comparative anatomy. It was he who convinced me that man was just another animal.

I can never adequately express my gratitude to Dr. Walter M. Dunlap of East Orange, New Jersey. At a very dark moment early in my professional life, it was he who influenced me to take orthodontic training under Angle. Having gone through the discipline of that training himself, he undertook to prepare me for it and spent hours of his time scaring the daylights out of me to ensure that I would go to Pasadena well prepared.

DR. ALLAN G. BRODIE

No one ever studied under Angle who did not feel the impact of his personality, and I was no exception. The man fascinated me from the moment I met him, and no one ever influenced me more than he did. Self-taught himself, he firmly believed in the motto that "Few have been taught to any purpose who have not been largely their own teachers." By lash and wit, of which he had both in abundance, he aroused men to efforts and accomplishments of which they did not suspect themselves capable. I look back at the year I spent with him as the most exciting of my life.

While I was in Pasadena a former class returned to the school to take examinations and exhibit their work, since they finished before they could

receive their certificates. This was the custom. Among those who returned were Dr. Dunlap and Dr. B. Holly Broadbent.

Thus started a friendship and a collaboration that have persisted down to the present. Broadbent was perfecting his cephalometer at the time, and I had the privilege of sharing in his planning and designing. I contributed little to these, but I had the satisfaction of acting as a sounding board against which he could test his ideas. Through the years Holly has contributed greatly to my work and to that of my students. With boundless generosity, he has permitted our withdrawal of priceless records from his files and has suffered our numerous interferences with his own tight schedule without showing annoyance. I can only humbly thank him for his patience and kindness and hope that our association may long continue.

During the brief interval of time that I practiced orthodontics in the East, I had the good fortune to become acquainted with the membership of the Eastern Association of Graduates of the Angle College. That roster contained the names of Hellman, Mershon, Weinberger, Hawley, Gough, MacKay, Osborne, Johnson, and Strang, to mention but a few. To attend their meetings and listen to their discussions was a heady dose for a young man. Of all of them, I came to know Hellman and Strang best. Both men fathered me in orthodontics, and their contributions set a pattern for me. I acknowledge those contributions very, very gladly.

My move to Chicago in 1929 opened the doors to a different kind of life and brought me under the influence of a completely new group of colleagues. Chief among these was Dean Frederick B. Noyes of the University of Illinois, who had induced me to go West. He and his dear wife took me and my family unto themselves, and we became almost members of their family. I have always considered Dr. Noyes my second father. He was one of those wise administrators who left his department heads alone. Although he was an Angle-trained orthodontist himself, he never sought to impose his ideas on me, but he left his stamp through long discussions on such topics as professional ideals, educational objectives, and scientific procedures. These we pursued on our way to and from school and office and frequently far into the night.

At Illinois I met and was closely associated with Isaac Schour, now dean of the school. Here was one of the most perfectly adjusted persons I have ever known. A modest man, small in stature but great in spirit, he possessed boundless enthusiasm for everything he did, unlimited imagination and courage in experimentation. Being of almost the same age and both new at teaching, we pooled our efforts and shared our experiences and had a wonderful time doing it.

These are not the only men I should like to bow to today, but time will not permit the acknowledgment of all that I should like to name. These are the giants upon whose shoulders I have stood, and I think you will agree with me that a rather apt simile could be drawn with that most modern human activity, rocketry. The last stage may carry the pay load, but it takes the booster stages to get it off the launching pad and aloft.

Other things influence men's lives besides the inspirational contacts he enjoys. Mark Twain once said that every dog should have a reasonable number of fleas; they keep him alert and prevent his becoming lazy. I, too, have had my fleas, and I thoroughly concur in Twain's sentiment. My fleas have been my students.

If there is anything that will keep one more on his toes than a smart student, I do not know what it is. In my early teaching days my students were as old as I was, and some were older. Several had already been teachers and knew all the little tricks that students had bedeviled them with. I had to work night and day trying to stay ahead of them, practice my drawing so that I could do it at the blackboard as though I were an old hand at it, and of course be letter perfect in what was contained in every assignment I gave them. To all of them I owe thanks, but to several in particular am I indebted. Dr. William B. Downs, Dr. Ernest Myer, and Dr. Abraham Goldstein joined my staff almost as soon as they finished their training and continued until only a few years ago. It was they who guided my thinking in the formulation and steadfast maintenance of policy. During my tenure as dean they carried the department. Amazingly enough, they are still among my closest friends.

Nor must I neglect to mention the deep satisfaction that I have enjoyed from seeing so many of my former students enter the field of orthodontic education and research: Wendell Wylie, Jack Thompson, Al Moore, Bill Adams, Art Rohde, Jake Franklin, Dan Subtelny, Bob Hedges, and Sherry Steadman, not to mention all those who are working in numerous departments in this and other countries. This constitutes a teacher's greatest reward.

Last, but most important of all in this parade of collaborators, is the one who has suffered with me all these years, my dear wife, Vera. It is said that any man who thinks he is smarter than his wife has a very smart wife. Mine is also extremely modest, and it would embarrass her if I said more, much as I am impelled to do so.

In closing, I thank you, the American Board of Orthodontics, for having done me the high honor of naming me to the roster of distinguished men who have preceded me.

Of Special Interest

A PRELIMINARY REPORT ON THE COUNCIL ON DENTAL EDUCATION'S CONFERENCE ON DENTAL SPECIALTIES AND SPECIALIZATION

EXTENSIVE new regulations for the control of the various specialties and specialty boards have been devised by the Council on Dental Education of the American Dental Association. These were presented by the Council at a Conference on Dental Specialties and Specialization held on July 9 and 10, 1959, at the A.D.A. headquarters in Chicago. The proposed resolutions are a part of the Council's 1959 annual report and will be submitted for adoption by the Board of Trustees and the House of Delegates of the A.D.A. at the centennial meeting in New York on Sept. 14 to 18, 1959.

The report includes a statement of general policy on specialties and specialization in dentistry:

> Specialists and specialties are identified in a profession for the primary object of protecting the health and welfare of the public and for no other primary purpose.
>
> Specialization, by nature and definition, demands full time or exclusive attention from the specialist.
>
> A practitioner may have every qualification of the specialist but as long as he does not hold himself out to the public as a specialist, he does not expose himself to legal, professional, and ethical sanctions.

The principal provision that will affect orthodontics is a new regulation on the acceptance of preceptor-trained men for certification by the American Board of Orthodontics. This regulation reads as follows:

> The board shall require for certification a minimum of two academic years of postgraduate study in recognized institutions or two calendar years of postgraduate study if the programs involve hospital training. Additional years of study may be required for the continuance of certification if the requirement is approved by the Council on Dental Education. Preceptorship programs shall not be accepted as a substitute for formal education programs after Jan. 1, 1965, by presently approved boards and for five years after approval by the House of Delegates for new boards.

Another requirement that is contrary to current A.B.O. practices falls under the general heading of *periodic surveillance* of board diplomates. Three regulations identify these requirements:

> The board shall maintain periodic surveillance over those certified by it to provide assurance of continued competence.
>
> The board shall issue certificates annually as evidence of the periodic review of the qualifications of those certified.

The board shall require an annual registration fee (of diplomates) intended to assist materially in supporting the continuing program of the board.

The boards are not alone in coming under control of the Council; the specialty societies also may ultimately be subject to some type of general supervision. Since the Council questions its present authority in this matter, it is recommending that the by-laws of the A.D.A. be amended so that its powers include "the recognition of special areas in dental practice" and also permit it to act "in maintaining effective liaison" with the related special groups as well as with the certifying boards. The Council's attitude is indicated in supplementary material issued at the conference:

Finally, such a relation [affiliation] would give the [American Dental] Association an entry for advice and guidance and, perhaps, some measure of general control over broad policies [of the A.A.O.].

Either a specialty board should not be approved until the end of preceptor training is in sight in that specialty, or a specialty board should be forced to improve its educational program by placing a time limitation on the use of preceptors.

One of the regulations objected to in other specialty areas, but which is in line with A.A.O. and A.B.O. policies, deals with part-time specialization for board diplomates. A.B.O. requirements are in agreement with the Council's general policy statement that specialization demands full-time attention, but the new regulations are not too clear on this point:

The board shall maintain a current list of those who have been certified and who announce themselves as specialists. . . .

The board will require a minimum of five years primarily in the area for which it grants certificates.

In this regard, no one can become a member of the American Association of Orthodontists unless he is in full-time practice, and A.B.O. policy is to accept no application until the applicant has been in exclusive practice for the equivalent of five years.

The American Association of Orthodontists has been in existence for more than fifty years, and the American Board of Orthodontics was organized by the A.A.O. in 1929. It has the distinction of being the first board in dentistry and the third board in either medicine or dentistry. Yet it was not until 1940 that the Council on Dental Education became concerned with the development of specialties in dentistry. The Council's authority in this area stems from a series of annual resolutions from the Board of Trustees and the House of Delegates of the American Dental Association. The most recent directives were adopted at the 1958 annual meeting:

Resolved, that the Council on Dental Education be requested to present a restatement of the requirements for the approval of specialty boards in dentistry, including particularly their government, administration, and standards.

. . . that the Council be requested to present a restatement of the [present] grouping of specialties and of the potential specialty groups in the practice of dentistry.

. . . that the Council on Dental Education be requested to develop its proposal without regard, if need be, of the limitations which exist under the present program.

. . . that the Council on Dental Education be asked to examine and report on the adequacy of its authority under the by-laws to recommend requirements for the approval of specialty boards.

At the outset, it was announced that the conference was called so that the Council could explain its recommendations but that it was not a meeting in which motions could be made to change the Council's resolutions. Seven boards, twenty-two specialty organizations, and approximately seventy-five delegates were present, but apparently very few of them were consulted directly or knew in advance of the Council's investigations prior to the general call for the conference. Nevertheless, the participants were free to discuss the various issues, but the Council made no commitments on whether any of the suggestions would be accepted. If, later, any changes in the resolutions are to be made, a supplement will be issued with the Council's annual report to the Board of Trustees and the House of Delegates. The next open hearing in all probability will be at the meeting of the Reference Committee of the House of Delegates on Tuesday, September 15, at the A.D.A. centennial meeting in New York.

B. F. Dewel, Chairman,
Publications Board,
American Association of Orthodontists.

Editorials

THE DETROIT MEETING OF THE AMERICAN ASSOCIATION OF ORTHODONTISTS

THE meeting of the American Association of Orthodontists which was held in Detroit, Michigan, May 3 to 7, 1959, was the A. A. O.'s fifty-fifth annual meeting and one of its best. There was recorded a registration of about 1,500 specialists and their wives. The meeting was a great success in every particular, from the opening gong on Sunday to taps on Thursday.

The Statler-Hilton Hotel was the headquarters. Not only did the local committees and officers put themselves out to make the meeting a success, but members of the hotel organization rolled out the red carpet for the visitors and worked with dispatch to show that they were no amateurs in handling convention groups and seeing to it that the guests were happy.

The program of the first day, Monday, included the presentation of the Albert H. Ketcham Memorial Awards and the induction of nine new members into the traditional Golden Anniversary Group of the A. A. O. The Ketcham Awards this year were conferred on two well-known teachers of orthodontics—Allan Brodie of Chicago, Illinois, former dean of the dental department of the School of Dentistry of the University of Illinois, and Robert H. W. Strang, one of the pioneers of orthodontics and a widely experienced teacher of orthodontics. The presentation of the Ketcham Awards was presided over by William R. Humphrey of Denver, Colorado, president of the American Board of Orthodontics and president-elect of the American Association of Orthodontics.

In his opening remarks, President Edward Martinek observed that more than fifty years have passed since the American Association of Orthodontists held its annual meeting in Detroit. He pointed out that at the last session in Detroit the late Herbert A. Pullen of Buffalo, New York, was president and Frederick McKay* of Colorado Springs, Colorado, was secretary. President Martinek also mentioned the coincidence of the opening of the St. Lawrence Seaway and the eighth wonder of the world, the Mackinac Bridge, and the A. A. O.'s second meeting in Detroit. This combination of circumstances should earmark the second Detroit meeting by association with two other very important dates in American history.

Several other features at this meeting attracted attention and inspired much comment. One was the fact that for the first time on any program of the A. A. O. the question of orthodontic public relations came up for a close

*Dr. McKay later did the original work on fluorine and its influence on teeth.

going over and sharp examination. Speakers, inferentially if not directly, left many attending the meeting with the impression that orthodontics has hung up an enviable record in the last sixty years and is the first specialty of dentistry but that its public relations are in real danger of cracking both from within and from without, if somebody does not "shake the finger of caution" in advance.

Harold Hillenbrand, the talented secretary of the American Dental Association, told orthodontists some things about public relations that may have been known but ignored. Most of the points made reference to orthodontics' indifference to the formal activities of organized dentistry as a group and the trend of specialists to segregate and pull away from the mother organization.

William Wilson of Boston, Massachusetts, in his brilliant Golden Anniversary Address had the temerity, as he put it, to "turn the looking glass" on modern current practices. Dr. Wilson made it plain that prejudice, intolerance, and segregated groups within a specialized group of health services cannot exist without a catastrophic price ultimately being paid in prejudiced public relations toward the entire specialty. Dr. Wilson also observed that good public relations are delicate intangibles which must be earned over a long period of time and which can be inadvertently cracked up without the groups involved even knowing what is happening.

Something else new, different, and very well timed was featured at this year's meeting. At the suggestion of the Program Committee, the last day, Thursday, was devoted to an expectancy and projection of the probable status of orthodontics ten years in the future. Obviously, for this assignment, the Program Committee selected essayists whom they thought, by reason of background, environment, and heredity, had a right to make an appraisal. There were two formal papers on this subject. One was by Harold Hillenbrand of the American Dental Association, and the other was by Touro Graber, orthodontist of Kennilworth, Illinois. The latter made a comprehensive and careful attempt to reconcile the over-all product of an extensive questionnaire that had previously been directed to orthodontists. This projection, which also pointed to a reflection on public relations, will soon be published in the JOURNAL so that readers will have an opportunity to study and appraise the results as presented to the A. A. O. by Dr. Graber.

The President's Banquet was tremendous, but this will be reported later by George Davis of Detroit. A separate report of the Golden Anniversary Luncheon in Detroit will also be made by Charles R. Baker of Evanston, Illinois.

The American Board of Orthodontics held an exhibit of case reports in the Bagley Room on the ballroom floor of the Statler-Hilton Hotel. This exhibit was open periodically from Sunday to Thursday.

This year's meeting was one of the best. It was well planned, and the committees did a masterful job in entertaining and in creating a coordinated meeting that will long be remembered.

The program was previously published in the JOURNAL; therefore there now follows a condensed rundown of the highlights of the meeting:

Monday, May 4

Official Opening of Session, Grand Ballroom
Paper by Wendell L. Wylie, Grand Ballroom
A.B.O. Thesis by Robert E. Moyers, Grand Ballroom
Golden Anniversary Luncheon, Grand Ballroom
Ladies' Luncheon, Sheraton-Cadillac Hotel
Ketcham Award Presentation, Grand Ballroom
Paper by Alton W. Moore, Grand Ballroom
Milo Hellman Research Award, Grand Ballroom

Tuesday, May 5

Ladies' Continental Breakfast, Michigan Room
A.B.O. Case Reports Exhibit, Bagley Room
Paper by Joseph R. Jarabak, Grand Ballroom
Paper by William L. Wilson, Grand Ballroom
Research Section, Michigan Room

Wednesday, May 6

Table Clinics, Grand Ballroom, Michigan Room, English Room, and Ivory Room
Past Presidents' Luncheon, Parlor C
Limited Attendance Clinics, 13th and 14th Floors
President's Reception and Cocktails, Oak Foyer, Michigan Room and English Room
Banquet and Dance, Grand Ballroom and Ivory Room

Thursday, May 7

Paper by T. M. Graber, Grand Ballroom
Paper by Harold Hillenbrand, Grand Ballroom

LADIES' ENTERTAINMENT

Monday, May 4

Ladies' Continental Breakfast, Michigan Room
Ladies' Luncheon, Sheraton-Cadillac Hotel

Tuesday, May 5

Ladies' Continental Breakfast, Michigan Room
Mixed Luncheon, Grand Ballroom (Attendance Limited)
Tours

Wednesday, May 6

President's Reception and Cocktails, Oak Foyer, Michigan Room, and English Room

The 1960 meeting will be held April 24 to 28 at the Shoreham Hotel in Washington, D. C., under the direction of George M. Anderson of Baltimore, Maryland. Preparations are now well under way for another fine meeting of the organization; in fact, two organization get-togethers were held in Detroit as a sort of preliminary.

In 1961 the meeting will be in Denver, Colorado, in the shadow of the Rocky Mountains in one of America's finest new hotels and under the leadership of William R. Humphrey.

The Detroit meeting and President Martinek's reference to the previous meeting in Detroit under the leadership of Drs. Pullen and McKay remind us

of the changes that fifty years have wrought in program interest. A review of the program material of that period reveals that they were talking about the opening of the maxillary suture. Specimens were on exhibit bearing on the topographical anatomy of the upper alveolar process and its adjacent air cavities, their functional significance, and the therapeutic value of modern orthodontic treatment. One of the essayists was Herbert A. Pullen of Buffalo, New York, whose subject was "Expansion of the Dental Arch and Opening the Maxillary Suture in Relation to the Development of the Internal and External Face." The "theme song" at the fifty-fifth meeting in Detroit, as announced by the Program Committee, was "Diagnosis, Treatment Planning, and Appliance Therapy."

Officers elected for the ensuing year are as follows:

President, George M. Anderson, Baltimore, Maryland.

President-Elect, William R. Humphrey, Denver, Colorado.

Secretary-Treasurer, Earl E. Shepard, St. Louis, Missouri.

H. C. P.

THE BIOPHYSICS OF BONE AND SUCCESS IN ORTHODONTIC THERAPY

ORTHODONTISTS who look beyond the appliance for successful treatment of malocclusion would do well to follow current findings on the biophysics and physiology of bone. Since teleologic explanations have followed animism into limbo, osteologists along with other biologic scientists are hard put to explain many of the phenomena of bone growth, bone metabolism, and functional influence on bones.

D'Arcy Thompson[1] skirted the teleologic philosophy when he stated that that there is "a physical causation by which the material structure [of bone] was so shapen to its ends." To escape the onus of teleology, Bell,[2] of the University of Saint Andrews, Scotland, states that "bones exhibit through their form and structure a high degree of mechanical fitness for their functions." Thus, we are told that the bones of the skeleton are "adapted" to support the body, to aid locomotion, and to protect important parts. Acceptance of the foregoing justifies the investigation of bones along biophysical engineering principles.

We know that bone shows marked structural and morphologic change in response to vascular, endocrine, nutritional, and other influences, including pressure and tension. We still do not know whether bone change is possible in the maxilla and mandible, although most orthodontists question whether changes brought about by orthodontic appliances extend to the bodies of the jawbones. We know that we can change the morphologic configuration of the alveolar process, but we do not know the extent to which these changes are possible and whether the changes effected will be transitory or permanent.

The basic morphology of bones is subject to genetic influences. This is one of the deductions that can be made from Baker's[3] work on prefunctional adaptation of bone. Geneticists now propose that all diseases and malformations, as well as what we regard as normal growth and function, have genetic implications.

The influence of muscle action on change in bone morphology is quite well known. How much we can change muscle function and so influence bone growth and form of the jaws is as yet unknown to orthodontists.

The work of Washburn[4] illustrates to some extent the relationship of muscle function on mandibular growth and development, especially at the gonial angle, the alveolar process, and the chin. The shape of the mandible, therefore, is dependent on muscle function and the presence and arrangement of the teeth. Myofunctional therapy, advocated as a therapeutic measure by the late Alfred P. Rogers,[5] may yet find new advocates. We need new and additional therapeutic agents to produce lasting orthodontic results. The biophysics of muscle function is now receiving increasing attention from myologists.

Wolff's law and the trajectorial therapy in general now have many opponents who claim that the shape of a bone is intimately related to the entire make-up of the animal and that a single bone cannot be isolated from the skeleton as a whole in studying biophysical changes. Postural and functional abnormalities of the entire head and neck (not just the jaws and related orodental structures) will have to be given consideration in establishing orthodontic diagnosis and therapy.[6]

There is a great deal still to be known about the effects of pressure and tension on bone change. A continuing controversy exists as to whether bone change and healing of bones are due to tension or whether they are the result of pressure.

We know that bones will grow in the presence of anodontia, where muscle function is not impaired, but that jaw growth is retarded in mandibular ankylosis. Nevertheless, osteologists warn against attributing bone growth to functional forces only. We have pointed out elsewhere that the mandible in the newborn infant shows trabecular arrangement in the line of functional force before function could have asserted its influence.[6]

In orthodontics it is widely accepted that tooth movement and concomitant bone change are the result of gentle pressure. On the contrary, vascular pressure tends to absorb bone. Whether the pressure of the periodontal membrane between the bone and the tooth is responsible for the unorthodox behavior of the cancellous bone in the alveolar process when pressure is applied by an orthodontic appliance, as suggested by Weinmann and Sicher,[7] still remains to be confirmed.

The trabecular density at the ends of long bones and the calcaneus is known to change when the calcium intake is altered. What about the intramembranous bones of the jaws? There is great need for research to determine bone density of the jaws before, during, and after orthodontic treatment.

There is need for further study of the effects on bone of various types of orthodontic appliances, variation in the amount of pressure and tension, changes

in diet, and other factors in relation to orthodontic therapy. Microphotometric studies of x-ray films taken by orthodontists could disclose information on bone which would bring about revolutionary changes in orthodontic practice.

J. A. S.

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The Fifty-fourth Annual Meeting of the American Association of Orthodontists

PAST PRESIDENTS' LUNCHEON

THE annual luncheon meeting of the past presidents of the American Association of Orthodontists is always a delightful experience. With hearty greetings and felicitations, the spirit of fine fellowship runs high. Our best regards always go to those not present and to the retired members, with inquiries as to their health and general well-being.

A period is given over for short personal remarks. Everyone present had high praise for the Detroit meeting, its effective organization, the excellent program, and the efficient operation down to the minutest detail, as well as the time schedule closely followed. The planning for the success of this heavy operation was laid heavily upon the shoulders of President Martinek, and he came out a big winner.

An element of sadness entered our meeting as reports were made of the serious illness of Archie Brusse and Lowrie Porter's inability to attend the luncheon because of an illness which he suffered while attending the meeting of the American Association of Orthodontists.

It is the duty of the president of the American Association of Orthodontists for the year immediately preceding to make all arrangements and to preside at the Past Presidents' Luncheon and to announce the program. Anyone acquainted with Past President Franklin A. Squires would know that every phase of the meeting would be properly cared for, and it was.

Of course, the high light of the meeting is always the presentation and induction into the past presidents' group of the retiring president of the American Association of Orthodontists. Past President Squires, with appropriate and fitting remarks, presented our very worthy President C. Edward Martinek for membership. He was, with warm and hearty greeting, unanimously accepted as the newest member. His remarks of acceptance expressed his deep appreciation for the privilege of serving his profession and for the high honor of membership in the past presidents' group.

The past presidents attending the luncheon meeting were Oliver W. White (1919), Joseph D. Eby (1927), Oren A. Oliver (1930), Charles R. Baker (1932), W. E. Flesher (1933), H. C. Pollock (1936), Earl G. Jones (1948), Max E. Ernst (1950), Joseph E. Johnson (1951), Bernard G. deVries (1952), Frederick T. West (1955), Philip E. Adams (1956), Franklin A. Squires (1958).

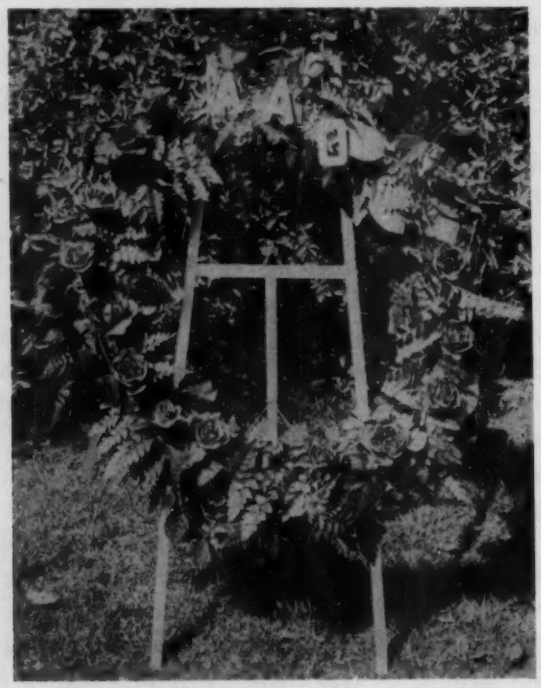
Past presidents not in attendance were Claude R. Wood (1942), Brooks Bell (1953), James W. Ford (1954), and A. Claude Broussard (1957).

Past presidents, retired, who were not present included Frank M. Casto (1909), Benno Lischer (1913), Walter Ellis (1928), Leuman M. Waugh (1935), Paul G. Spencer (1937), James D. McCoy (1938), and Archie B. Brusse (1946).

W. E. F.

MEMORIAL SERVICE

A MEMORIAL service honoring members of the American Association of Orthodontists who have died during the past year was held on May 4, 1959. As the name of each of the deceased orthodontists was read, his photograph was projected on a screen, a short obituary was presented, and a red rose was placed in the "Wreath of Memory" which was maintained throughout the meeting. The memorial service ended with the following remarks by Ernest N. Bach, chairman of the Necrology Committee:



WREATH OF MEMORY

"This Wreath of Memory, bearing one red rose for each of the esteemed members whose names were just read, stands as an affectionate tribute to the many contributions which these men have made to orthodontics as well as to their teachings and philosophy, which have remained sound over the years. The unselfish spirit of sharing and of imparting their valued knowledge and

experience, their friendship to younger members, and their devoted co-operation in promoting the welfare of the Association are the ideals for which we shall always hold them in reverence. To all of them we owe a debt of gratitude. We are truly grateful to those who have been our esteemed and closest friends through the years for having given us the benefit of their counsel, friendship, and advice.

"I like to feel that those whom we have loved and known so well must still have some unexplainable connection with the physical world from which they have departed, and as we stand we do so in respect and affectionate admiration of those we hold in memory today.

"As we pay honor this is more than a memorial; it is an altar upon which we should dedicate ourselves to carry on the unfinished tasks they have started and to help maintain the ideals and standards which have placed our specialty upon such a high plane. And now, God, for the lives of these men whom we have honored today, may we always be humble and thankful and ever mindful of others whom we may help in a similar manner.

"In closing this memorial service, may I say: Have faith in the future, for men who live in the future live in eternity."

E. N. Bach

GOLDEN ANNIVERSARY LUNCHEON

THE seventh annual luncheon meeting of the Golden Anniversary Group of the American Association of Orthodontists was held in the Grand Ballroom of the Statler-Hilton Hotel in Detroit on May 4, 1959.

Ernest N. Bach, vice-president of the American Association of Orthodontists presided. It was Dr. Bach who suggested the establishment of this feature of the program to honor present and past members of the American Association of Orthodontists who have served dentistry for a half-century.

The following nine members were welcomed into the Group:

Basil E. Brownlee,* Winnipeg, Manitoba, Canada
William T. Chapman, El Paso, Texas
Max E. Ernst,* St. Paul, Minnesota
A. LeRoy Johnson, Great Barrington, Massachusetts
Thad, Morrison, Sr., Atlanta, Georgia
Oren A. Oliver,* Nashville, Tennessee
Harry E. Perkins,* Topsfield, Massachusetts
William E. Stoft,* Omaha, Nebraska
Charles E. Wagg, Lambertville, New Jersey

Sixteen members of the Golden Anniversary Group were present, as shown in the photograph taken immediately after the luncheon.

*Present at meeting.

It was with deep regret that we noted the deaths of the following members since the last meeting: Earl W. Swinehart, Lloyd S. Lourie, Sr., Harry L. Logan, and Alfred P. Rogers. Lloyd S. Lourie, Sr., was the last surviving charter member of the American Association of Orthodontists.

The Golden Anniversary Group is now composed of fifty-two members, of whom thirty-two are still in active practice.

Golden Anniversary Luncheon of the American Association of Orthodontists, Statler-Hilton Hotel, Detroit, Michigan, May 4, 1959.

Seated: Oren A. Oliver, William E. Stoft, Harry W. Perkins, William E. Flesher, Oliver W. White, H. Carlyle Pollock, Sr., and Andrew F. Jackson.

Standing: Samuel J. Lewis, Max E. Ernst, Joseph D. Eby, Basil E. Brownlee, Robert H. W. Strang, Fred W. MacDonald, Charles R. Baker, Elmer E. Lampert, and Hugh T. Berkey.

A few lantern slides were shown—graduating pictures of the new members and pictures of first offices of some of the members.

Goldengrams (special greeting cards) were signed by the sixteen members present and sent to all members who were not able to attend.

The speaker was Dr. William L. Wilson, of Boston, whose splendid address follows this report. Dr. Wilson received a spontaneous standing ovation from the more than 300 persons in attendance.

GOLDEN ANNIVERSARY COMMITTEE
Oliver W. White
William E. Flesher
Charles R. Baker, Chairman.

GOLDEN ANNIVERSARY LUNCHEON ADDRESS

WILLIAM L. WILSON, D.M.D., BOSTON, MASS.

IT IS indeed a happy occasion each year when we gather to honor these Golden Anniversary Group members who have contributed so much to orthodontics. If this is a happy occasion, it seems to me that it also should be a solemn occasion, when we may pause to pay tribute to those who have passed on. Many of these have been pioneers of orthodontics.

These were remarkable men, for they had no easy road to travel. The early pioneers had no guideposts to tell them whether they were right or wrong, no court or consistory to consult for approval or confirmation of their work, no authority but their own judgment, and no support in the face of criticism but their own resolute character. It is not surprising, then, that these were highly individualistic, independent men.

Some of our pioneers were gentle men. They must have enjoyed an inner peace, feeling a security in their own beliefs. Certainly, we know that only one who feels insecure finds it necessary to be dogmatic and unreasonable.

In the arts and sciences much is made of the fact that the work of Mendel was not discovered until thirty-five years after his death, that Charles Darwin came to be fully appreciated only in recent years, and that Tchaikovsky died despondent because his greatest symphony, "The Pathetique," was rejected as being merely mediocre.

We have had our counterpart in orthodontics—men who have died after seeing their ideas and concepts rejected. Would that some could now see their ideas hailed in our time as rediscovered truths or perhaps even claimed as original thought by some newcomer!

All of us have felt the influence of these men deeply, some of us intimately. Even the young student is touched by it, for orthodontic knowledge today is the fruition of the compounded wisdom of our predecessors. Their contribution has become our heritage.

Today, in 1959, I submit to you this question: "Are we worthy of this heritage?"

We point with pride to our mechanistic progress, and we take satisfaction in certain of our successes, our enhanced reputations, and recognition and demand for our services.

Let us turn and face the looking glass and ask ourselves if all is well. As we feel the public pulse, do we not detect a real and rising concern over orthodontic failures and abuses, over conflicting ideas among orthodontists, over the unavailability of treatment because of high costs? As we confer with dentistry and our allied specialties, can we any longer ignore the mounting antagonisms and criticism of lack of perfection in our work? Is it not true that the very mechanotherapy in which we rightly take pride becomes the wedge that tends to divide us?

Certainly, all is not well. We cannot deny this; nor can we take comfort in the fact that, individually or collectively, we may not be entirely at fault.

These problems are not peculiar to orthodontics alone but are common to each of the specialties and to dentistry itself. There is one underlying common factor here, the problem of human behavior and emotions. Can we hope to make progress in these areas until we first take a cold, hard look at ourselves?

Orthodontics, no less than any other profession, places great demands on one's emotional stability. Where personal inadequacies exist, compensating behavior takes over and tends to restrict freedom to exercise judgment with objectivity.

The problems are not superficial, and the solutions are not simple. From time to time we may become intoxicated with our successes and develop delusions of self-grandure as orthodontists. When we are confronted with inevitable problems and failures, we feel compelled either to hide them or to distract attention from them by aggressive and uncompromising attitudes toward those who hold different concepts. This is the fertile climate in which dogmas are born. We must then rid ourselves of any such delusions and accept with due humility these limitations that are placed upon us.

Feelings of guilt are experienced by each of us from time to time when we are faced with personal failures caused by nothing other than errors in diagnostic judgment and treatment inadequacies.

Frustrations are inevitable for the orthodontist in the face of some insoluble problems. Reactions to this failure to achieve perfection constitutes one of the greatest problems facing us today. These first become evident in students who, faced with the complexity of orthodontic problems, feel insecure. These insecurities breed a sense of inferiority which tempts the student to embrace sure-fire systems. This is natural. It is motivated in part by a desire for excellence, and this is good, but it is also motivated in part by a fear of having his orthodontic results judged by the unattainable standards of perfection. This causes the student to cling to the teachings of dogmatic teachers and deprives him of perspective in his early years of orthodontics.

Uncompromising dogmas do satisfy temporarily the desire for security, however great the disillusion may be later. More realistic orthodontic education provides no such standard around which students or disciples can gather. Rather, the universality of orthodontics, with its successes and its failures, its knowns and its unknowns, offers little security but rather an intellectual challenge to remain forever the student.

Much of the burden here falls upon orthodontic education which faces the need for developing realistic attitudes toward perfectionism. In order to facilitate teaching, certain systems have been set up with illusions of achieving perfection. Students caught in the initial whirlpool of enthusiasm for such dogmas or systems can see little else until the test time brings them face to face with the harsh reality of the workability of their concepts. In dealing with students, we must continue to cultivate high standards, but at the same time we must not saddle them with the burden of unattainable objectives. Resultant failures cultivate a sense of self-guilt which, on the one hand,

stifles the development of orthodontic perspective and, on the other, frequently leads to reaction. Reaction without the sobering effect of fundamental knowledge and experience fosters extremism, and this is our present dilemma.

This represents a genuine problem for the teacher; on the one hand, he must set and retain standards and, on the other, he must develop reasonable attitudes toward perfection. He recognizes the inherent danger. It is human nature to be easily satisfied with modest attainment and to fall into the cult of mediocrity. Retaining this concept of ideals on the one hand and reasonable attitudes on the other will demand the very best in a teacher.

It could be a simple matter for a teacher feeling cloistered and somewhat protected within his university reputation to build up a dogmatic position for a systematic approach to perfection. This would produce a narrow and specialized technician with extremely circumscribed vision. Instead, however, he must explore, broaden the base of fundamental knowledge, flavor it with orthodontic experience, and inculcate objective thinking. This distinguishes education for a profession from training for a trade.

This problem is not ours alone. In a recent symposium on education for science there was a complaint that: "Legions of science textbooks serve up to hapless students a crystallized anonymous science that seems to have descended perfect like the divine city out of heaven, straight from the unquestioned authority. How can we make any science such a travesty as to teach it upon the word of authority?" There is a profound difference between the search for truth based on concepts that are held merely by authority and the liberating discipline that puts no orthodontic concept beyond the test of matching its consequence with fact.

Education that is unhampered by restrictive dogma permits one to discover new truths more quickly and discard old errors more easily. It is error alone that needs the support of authority. A scientific truth can stand by itself. Dissemination of orthodontic knowledge is not enough then; education must instill a burning desire for inquiry. There is increasingly a need for the nonconformist, for the free thinker.

From time to time we are confronted with a presentation of serial case results which carries with it the suggestion of perfection and superiority of method. This may or may not be rightly so. Serial results, however, become possible when nutured by selective clinical material and by ignoring the complex and bizarre problems that confront the orthodontist. Such a selection of cases is indeed a luxury in which few may indulge. The orthodontist has an obligation not to just a select few but to the widespread need of his services, and this must be met in the economic environment of a community in which he finds himself.

A profession such as ours has two responsibilities: (1) maintaining high standards and (2) rendering service to mankind. Some of the greatest service that we render falls far short of perfection. How remiss we would be to say, "Take it or leave it." There are genuine dangers here which are not to be dismissed lightly. Under the guise of service, it is possible for orthodontic

standards to deteriorate rapidly. Under the standard of perfectionism, our service to human needs can dissipate and ours becomes a professional disservice.

The achieving and maintaining of a delicate balance here demand the maximum in orthodontic knowledge, ability, and emotional stability, nurtured by a keen awareness of human needs and of one's responsibility to his fellow men. This is in keeping with the highest principles of the Judaic-Christian culture of which we are a part. The recognition by orthodontics that the merits of this action must be held in equal regard with the ideal results attained under different circumstances is long overdue.

We certainly find ourselves with a need of better public relations. This does not mean better publicity, for this merely creates antidotes which produce a certain cynicism about the efforts rather than an acceptance of the propaganda. Our public relations cannot be voted or imposed by this Association; rather, they lie in the actions of each of us as individuals, and this means not just an occasional act of charity but rather the job well done, the best thing done for the child under the circumstances motivated by both honesty and integrity. This is a highly individual and a deeply personal thing that involves the very moral character of the orthodontist himself. The status of the profession can be no more than and will be no less than the moral and ethical behavior of individual orthodontists. Failure to heed this truth may cause public opinion to rear an ugly head and consume us, and our destiny will be controlled for us. We would deserve no better fate.

It is clear, then, that orthodontics must have a dual concern: first, to develop and utilize knowledge (the technical aspect) and, second, to enlarge the orthodontist's comprehension of his place in society (the nurture of conscience). This is the philosophical aspect of which we hear so little.

Some of the problems of perfectionism are of our own making. There have been notable failures in orthodontics. There is the failure on our own part to accept and admit the fact that perfection is not always attainable.

There has been a failure to communicate this truth to the dental profession as a whole. There has been a failure, also, to transmit this information frankly to parents before treatment is initiated. There have been notable instances in which frustrations in the lack of this understanding have precipitated more radical treatment in which the patient has eventually suffered.

As we look at ourselves, we can see clearly how our own personal shortcomings are cause for our present problems. We recognize that most of us are average men, and average men tend to be mediocre. Mediocrity is a drag upon us when our goal is to aspire to excellence. Fortunately, with the treatment methods at our disposal, the nature of most orthodontic problems warrants nothing less than an aspiration to such excellence. We do see, however, that the pursuit of perfection for emotional reasons where perfection is unattainable carries us beyond the periphery of reasonable treatment.

We also see vanity, pretension of personal superiority, descend like a fog to becloud our relationship. This is no plea for tolerance, for tolerance is an ugly word; nor should one be any less resolute or steadfast, any less true

to his convictions. There is room, however, for a sense of fairness and unselfish regard for the other fellow's opinion. Our open-mindedness must consist of something more than just a willingness to rearrange our prejudices. There must be an abiding faith in basic values. Each orthodontist must detach and create for himself an integrated view of himself and his humanistic responsibilities. Where he can achieve perfection, he must pursue it relentlessly; where conditions and his conscience dictate otherwise, he must use his knowledge as a guide, know his duty, and have the courage to do it.

We recognize that these emotions—the insecurities, the inferiorities, the fears, the guilts, the compensations that deter us—will test our stability and strength of character. We must rise above these before we can assume the cloak of human dignity. Indeed, until we do, there is little hope that we can do justice to those whom we serve or to our profession and its relations with others. Indeed, orthodontics stands in jeopardy.

Now, in 1959, we find that the era of the pioneer in orthodontics is passing. This was a necessary era of leaders who exposed the truths, set the standards, and chartered the possible courses—some right, some less than right. The impact of some on the profession has been good, and that of others has been subject to controversy, but the intentions of all have been both noble and inspired. To these men, orthodontics was not the means to an end but a way of life. These, indeed, have been men of stature.

We are now on the threshold of an era in which we no longer need new pioneers. Our need now is for men educated with a breadth of concept; men of wisdom, understanding, humanistic conscience, and stability; men who are free to reject dogma in favor of testing concepts by their fidelity to observe fact; men who will throw off the slough of blind adherence to leadership and embrace the universality of understanding, unfettered by human failings.

As the scope of orthodontics broadens, the challenge facing us becomes greater than any challenge that confronted our predecessors. Orthodontics will increasingly demand the best in us, and the best in us will many times fall short. There is no room for smugness, for no one of us can pretend to have all the answers. Each of us might have something to contribute, but each of us will have something to learn. Each of us must become his own severest critic. Each may rightly feel a sense of pride in being a part of orthodontics, but each should feel a sense of humility before its problems. No one of us shall feel free to say, "Come, follow me, let me show you how." Rather, like the classical scholar, we must say, "Come, let us reason together." Each of us must feel a share of responsibility in accepting this challenge. Only then shall we truly merit and be worthy of this heritage of orthodontics which is ours.

REFERENCE

1. Glass, B.: Bull. Atomic Scientists 14: 349, 1958.

230 Beacon St.

PRESIDENT'S RECEPTION AND BANQUET

THE President's Reception was held on May 6 in the Michigan Room of the Statler-Hilton Hotel in Detroit, Michigan, from 6:30 to 7:30 P.M. In the receiving line were the officers of the Association and their wives: President and Mrs. C. Edward Martinek, Vice-President and Mrs. Ernest N. Bach, President-Elect and Mrs. George M. Anderson, and Secretary and Mrs. Earl E. Shepard. Background music was provided by three pieces from the Warney Ruhl Orchestra. At 7:30 the guests were seated in the Grand Ballroom at previously reserved tables for ten.

At 7:40 the guests at the head table marched into the Grand Ballroom to the Michigan song, "The Victors," and were seated. The Warney Ruhl Orchestra provided dinner music. Following the famous Statler prime ribs of beef dinner, Dr. Gus G. Sotiropoulos, toastmaster, introduced all at the head table in cleverly rhymed jingles. Immediately after introductions of those at the head table, the Ruhl Orchestra put on a fifteen-minute floor show. This was followed by the comedy act of Roger Ray.

At this point, in a noticeable change of style and tempo, PeeWee Hunt and his Twelfth Street Rag Band took over the bandstand and played dance music, alternating with the Ruhl Orchestra. At approximately 12 midnight PeeWee Hunt's group put on the second floor show of the evening, and the dancing continued until 1:30 A.M.

Many people said that this banquet must rate as one long to be remembered.

Entertainment Committee.

Reports

REPORT OF THE GOLDEN ANNIVERSARY COMMITTEE, AMERICAN ASSOCIATION OF ORTHODONTISTS

WE ARE pleased to report that the following eligible candidates will be inducted into the Golden Anniversary Group at the current session:

Basil E. Brownlee, Winnipeg, Canada
William T. Chapman, El Paso, Texas
Max E. Ernst, St. Paul, Minnesota
A. LeRoy Johnson, Great Barrington, Massachusetts
Thaddeus Morrison, Sr., Atlanta, Georgia
Oren A. Oliver, Nashville, Tennessee
Harry W. Perkins, Topsfield, Massachusetts
William E. Stoft, Omaha, Nebraska
Charles E. Wagg, Lambertville, New Jersey

Our membership at this time is fifty-three pioneers, all of whom graduated fifty or more years ago. Thirty-two of these members are still in active practice.

We regret to report that during the past year we have lost the following members by death:

Earl W. Swinehart—July 21, 1958
Harry L. Logan—Aug. 23, 1958
Lloyd S. Lourie, Sr.—March 12, 1959

As you know, Dr. Lourie was the last surviving charter member of the American Association of Orthodontists.

This year, our presiding officer at the Luncheon, will be Vice-President Ernest N. Bach, who is the person responsible for the organization or establishment of the Golden Anniversary Group and to whom we are genuinely appreciative.

Our speaker will be Dr. William L. Wilson of Boston, and we are confident that our members and the audience will enjoy his address.

The Golden Anniversary Group members genuinely appreciate this annual honor and recognition by the American Association of Orthodontists.

Respectfully submitted,

OLIVER W. WHITE
WILLIAM E. FLESHER
CHARLES R. BAKER, Chairman

REPORT OF THE SEVENTH ANNUAL LUNCHEON MEETING OF THE GOLDEN ANNIVERSARY GROUP OF THE AMERICAN ASSOCIATION OF ORTHODONTISTS

YOUR Committee is pleased to send you this report of our very successful meeting at the 1959 A.A.O. session in Detroit. A complete story of the event will appear in the AMERICAN JOURNAL OF ORTHODONTICS.

The following members were present at the head table:

Charles R. Baker	William E. Flesher	Oren A. Oliver
Hugh T. Berkey	Andrew F. Jackson	Harry C. Perkins
Basil E. Brownlee	Elmer E. Lampert	Harvey C. Pollock, Sr.
Joseph D. Eby	Samuel J. Lewis	William E. Stoft
Max E. Ernst	Frederick W. MacDonald	R. H. W. Strang
	Oliver W. White	

The attending members all signed "Goldengrams" which were sent to absent members.

The following letters, or excerpts, were received from some of our members who were not able to attend the meeting:

I wish I could be with "you-all" in person to congratulate the "gang." I am not so good in walking—also, the weather might interfere. My heart will be with you.

Jacob A. Gorman

Please convey my congratulations to the members of the Golden Anniversary Group and the new members. I hope all of them will attend and would like so much to welcome them in person.

Henry F. Hoffman

I am sorry not to be able to attend the meeting or the Golden Anniversary Luncheon. Please express our best wishes to all and say that we are well and busy, mowing the lawn, raking flower beds, spraying shrubs and fruit trees and, as usual, SPREADING FERTILIZER. Hope to attend next year.

Leuman M. Waugh

I am very grateful to you for sending me the emblem of the G. A. Group. It would be a pleasure for me to attend the meeting but circumstances do not make it possible. My best regards to those who remember me.

A. LeRoy Johnson

Though I have reached my ninth decade and am lingering in the lengthening shadows of Life's twilight, I am happy to report that I still enjoy life. . . . With best wishes for a happy reunion and assurances of my esteem, I am

Benno E. Lischer

Wish I could be with you on May 4th as among those joining the Golden Anniversary Group this year. I note old friends whom I should love to see again.

W. W. Woodbury

Am in the process of retiring from practice. Continued best wishes to all Golden Anniversary members. Hope to see you at the next meeting.

Leonard T. Walsh

I regret that I cannot attend the luncheon this year. Please extend to the Group my heartiest congratulations and best wishes, particularly to the new entrants for having the distinction of reaching the honorable age of fifty years of service to the welfare of the human race. My regards to my fellow student, Dr. A. LeRoy Johnson.

Alfred M. Desnoes

Telegram: I exceedingly regret to miss the opportunity for a visit with old friends but will be there in spirit. Please convey my kindest regards and best wishes to all. Continue to uphold and promote the highest orthodontic ideals and objectives. Fraternally,

Frank M. Casto

Mrs. Leslie and I have just returned from a trip on the S. S. Hoover, stopping at Honolulu, Japan, Manila, and Hong Kong. Wish we could be with you "young bloods" at the luncheon. Will try to make it in 1960. Fraternally,

William W. Leslie

I know of no individual or agency who moves with more regularity than Income Tax and Charlie Baker. As soon as the sap begins to rise in the spring, and vegetation spreads the hillsides with a coat of green, you'll get a letter from friend Charlie. Yes, it is full of good cheer BUT also carries some stern orders like, to wit: "If you can't attend the luncheon, send in a report. We must know how you are behaving yourself." So here's mine.

When I address you Boys in writing, I do not sense the formality of a letter, but rather feel that each member has pulled up his chair, and placed it in circular formation, and is eager to say his say. This informal discussion will surely give consideration to such subjects as rheumatism, lumbago, loss of memory, deafness, and what else have you.

Certainly your years and mine have brought us face to face with more problems than physical aches and pains. Couldn't we find profit and comfort in adopting as a maxim, say "The Philosophy of Life"? You might call it by another name, but it would still have the same color and possess the same potency. And what would we get from such an adoption? It provides the love of wisdom, of ethics, of esthetics, of calmness of temper, of mutual serenity, and of religion. He who said "We become a part of everything we come in contact with" uttered a great truth. With a philosophy to aid in screening the good from the evil, to furnish an urge to appropriate the good, to supplant boredom with worthy activity—these are the fruits which time will ripen into a well-rounded character.

Time keeps books on a man's life. Some credits, which we regard as trifles, may bring the biggest dividends. A man is no greater than his investment in life; his possessions, no larger than what he paid for them.

Our Group is rich in years and experience. Have we caused the trifles, which so often enrich one's life, to become a part of us through the years? "Trifles make perfection, but perfection is no trifle." Most cordially yours,

Ernest W. Patton

After getting home from a fine Florida vacation, I was floored by a virus infection, and do not think it wise to make a trip to Detroit. Please congratulate my old friends, Max Ernst, Oren Oliver, and Harry Perkins, who at last have "grown up."

Am enclosing a "ditty" that conveys my feelings, which you may read to the Group if there is time. Kindest regards.

Walter H. Ellis

(Dr. Ellis enclosed an amusing verse entitled:

"My Get Up and Go Has Got Up and Went.")

We hope that next year every absentee will write to us.

COMMITTEE

REPORT OF THE INTER-RELATIONS COMMITTEE, AMERICAN ASSOCIATION OF ORTHODONTISTS

THERE have been no applications for membership or business involving other countries during this administration. We have, however, taken cognizance of the effort on the part of the incoming administration to invite essayists from abroad to participate in the 1960 A.A.O. meeting. We have written cordial letters to those whose names have been furnished in this category.

It appears that next year's Inter-Relations Committee might require a small appropriation to ensure that our foreign guests receive adequate attention.

Respectfully submitted,

ROBERT H. W. STRANG
EDWIN C. LUNSFORD
STEPHEN C. HOPKINS, SR., Chairman

REPORT OF PROGRAM MANUAL COMMITTEE, AMERICAN ASSOCIATION OF ORTHODONTISTS

THE Program Manual Committee does not recommend any significant changes in the present manual. Those responsible for its preparation are to be complimented.

The following additions and changes are suggested:

1. Substitution of an honorarium of $50.00 for essayists and limited attendance clinicians who are members of the A.A.O. in lieu of the present procedure of giving these persons complimentary tickets to the various social functions. The purpose of this change is to save a great deal of time and effort for the General Arrangements or Program Committees in arranging for the tickets. While this will increase the essayist's and limited attendance clinician's expenses to the Association, it is for the reason that in the past limited attendance clinicians did not receive compensation comparable with that given the essayists.

2. The checks for honoraria and expenses of *guest* essayists should be sent to the essayists approximately two weeks prior to the meeting. They are entitled to this courtesy and I am sure that it is a convenience for them to purchase their transportation without delving into their personal funds.

3. No tape recorders or like devices will be permitted to record the essays, panels, limited attendance clinics, and so forth. I am sure that in the future more and more of these will be brought to the meetings. These are somewhat disturbing to many speakers, and it is not fair to the audience to have this distraction. The only exception to this rule would be the use of a recording device for official purposes of the A.A.O.

4. The printer's proof of the completed program should be read and reread carefully by the Program Chairman and at least two other persons in order to detect errors. No doubt, certain changes would be made in the proof and, if

this is necessary, it is essential that the proof of the changes be re-examined. This requires time; therefore, it is important that the material for the program be in the hands of the printer so that there is ample time for a second or third proofreading if necessary.

Respectfully submitted,

WILBUR PREZZANO
GEORGE ANDERSON
SAM GORE
C. EDWARD MARTINEK
HENRY BEEBE
JOHN R. THOMPSON, Chairman

REPORT OF THE PUBLICATION BOARD, AMERICAN ASSOCIATION OF ORTHODONTISTS

THE Publication Board is pleased to report no serious publication problems during the past year. This, of course, is mainly due to our very capable editor-in-chief, Dr. H. C. Pollock, and his staff.

The editorial staff has continued the publication of Orthodontic Profiles, which has received such favorable comment by the membership since its inception last year.

One specific matter which the editor brought to the attention of the Publication Board was the use of the term *orthodontics* versus the use of *orthodontia* inasmuch as it has continued to be confusing in the publication of orthodontic manuscripts.

Dr. B. F. Dewel, who is a member of both the Publication Board and the Committee on Nomenclature, was therefore asked to express his views editorially, which he did in a most capable manner in the November, 1958, issue of our JOURNAL. Your chairman wishes to take this opportunity to thank Dr. Dewel for his excellent editorial and clarification of the subject.

The annual report from our publishers, The C. V. Mosby Company, is as follows:

1. Average number copies per issue printed	5,483
2. Membership subscriptions American Association of Orthodontists	1,895
Other societies	209
3. Membership subscription revenue	$14,728.00
4. Independent subscriptions—average	3,016
5. Revenue from independent subscriptions	$22,620.00
6. Gross revenue from advertising	$19,090.66
7. Average number of complimentary copies	155
8. Illustrative plate costs	$1,871.59
9. Profit for 1958	$6,820.67

The letter accompanying this report is submitted as Exhibit A.

This letter and report are certainly evidence of our excellent relations with The C. V. Mosby Company.

The fact that our JOURNAL will be in its forty-fifth year of continuous publication in 1959, without ever failing to go to press for a single issue, is indeed an enviable record for The C. V. Mosby Company and the American Association of Orthodontists.

Respectfully submitted,

B. F. DEWEL
LEIGH C. FAIRBANK
JOHN W. RICHMOND, Chairman

REPORT OF LIBRARIAN, AMERICAN ASSOCIATION OF ORTHODONTISTS

SINCE the last annual report, the following material has been placed in our bookcase in the Library of the American Dental Association in Chicago:

Microfilms of Abridged Minutes:
Meetings of Board of Directors—April 27 and 29, 1958.
General business meetings—April 29 and May 1, 1958.
Copy of Constitution and By-Laws of the A.A.O. amended to April 30, 1953.
One bound volume of 1958 AMERICAN JOURNAL OF ORTHODONTICS.
One American Board of Orthodontics booklet 1958-1959.
Two photostatic copies of the 1905 A.A.O. program.

(*Note:* Dr. Walter H. Ellis sent me an original 1905 program, and I had the photostatic copies made.)

Our library now contains official programs of forty-five A.A.O. sessions. I need the following six programs to complete the file: 1901, 1902, 1903, 1908, 1909, and 1922.

The following material was received from the historian, Dr. Leuman M. Waugh, and was placed in our library:

One colored lantern slide of Dr. A. C. Broussard.
Program and comments on 1957 meeting.
One colored slide of Dr. George R. Moore (to replace broken slide).

(*Note:* Each lantern slide in our collection bears a gummed label reading "American Association of Orthodontists." Slides are kept in a suitable metal container.)

Respectfully submitted,

CHARLES R. BAKER, Librarian

In Memoriam

EARLE WILDES SWINEHART
1875-1958

EARLE WILDES SWINEHART was born on Sept. 21, 1875, at Adelphi, Ross County, Ohio. He died on July 20, 1958, while on vacation in the same little town of Adelphi, Ohio. Services were held in Adelphi on July 21, and the body was brought to Baltimore, Maryland, for burial on July 24.

After graduating from high school, Dr. Swinehart obtained a teacher's certificate and taught for five years in the grade school at Adelphi. In 1899 he entered the Ohio College of Dental Surgery at Cincinnati and graduated in 1902. He entered the general practice of dentistry at Adelphi. In 1909 he attended the Angle School of Orthodontics and in 1914 he moved to Baltimore, Maryland, and began specializing in orthodontics.

He was a member of the following orthodontic groups: American Association of Orthodontists, Middle Atlantic Society of Orthodontists, nonresident member of Northeastern Society of Orthodontists, European Orthodontic Society, Washington-Baltimore Orthodontic Society, and Angle Society of Orthodontists. He was a diplomate of the American Board of Orthodontists.

He was a member of the following dental groups: American Dental Association, Maryland State Dental Association, Baltimore City Dental Society, American College of Dentists, American Association for the Advancement of Science, Federation Dentaire Internationale.

He was a national honorary member of Psi Omega fraternity and Omicron Kappa Upsilon.

He belonged to the following nonprofessional organizations: Maryland Academy of Science, University Club, Kiwanis Club of Baltimore, Torch Club of Baltimore, and the Maryland Historical Society.

Throughout the years Dr. Swinehart's leadership was recognized and he was privileged to serve in various capacities in dental organizations. He was especially honored to serve as president of the American College of Dentists, the Maryland State Dental Association, the Eastern Association of Angle Graduates, and the Washington-Baltimore Orthodontic Society.

Dr. Swinehart taught for a number of years at the Baltimore College of Dental Surgery, first as a demonstrator and later as professor of orthodontics.

He contributed to the literature of orthodontics through essays, case reports, clinics, inventions, and collaboration in the writing of a textbook.

Dr. Swinehart's wife, the former Miss Grace Rush Riegel, died in 1945. In recent years he lived with his son, Dr. D. Robert Swinehart. In addition to his

son, he is survived by three sisters, Mrs. Flora R. White and Mrs. H. G. MacFarren, both of Adelphi, and Mrs. Horace N. Curtis of Dayton, Ohio; and two grandchildren.

Dr. Swinehart will long be missed and remembered by those who knew and loved him.

BE IT RESOLVED that this Society place on record its appreciation of his services and express its sorrow in the great loss sustained, and be it further *RESOLVED* that a copy of these resolutions be forwarded to the bereaved family as evidence of our sympathy and that a copy be spread in the minutes of our Society.

WILLIS J. MCCORMICK
MILTON B. ASBELL
STANLEY G. MOORE, Chairman

Department of Orthodontic Abstracts and Reviews

Edited by
DR. J. A. SALZMANN, NEW YORK CITY

All communications concerning further information about abstracted material and the acceptance of articles or books for consideration in this department should be addressed to Dr. J. A. Salzmann, 654 Madison Avenue, New York City.

Some Correlation Between the Occlusal Pattern, Function and Pathology of the Masticatory System: By U. Posselt and A. Posselt. *Paradontologie* **13**: 3-9, April, 1959.

Few characteristics of the occlusal pattern are readily susceptible to measurement; these include the degree of vertical and horizontal overlap in the anterior region, the number of teeth, and the Angle classification.

The only intercorrelations indicated in the literature are the following: the larger vertical overlap, the larger the freeway space; the larger the horizontal overlap, the larger will be the condyle translation from occlusion to rest position and also during phonation.

Relations between occlusal disharmonies and periodontal diseases seem to be fairly complex. The same is true for occlusal disharmonies and arthroses of the temporomandibular joint. The many other factors involved make it improbable that any special type of occlusion or malocclusion can be considered of primary etiological significance.

This study examined possible correlations between the degree of vertical and horizontal overlap, the number of teeth, and the Angle classification representing occlusal pattern and freeway space and condylar shift measurements from rest to retruded position and to the maximally occluded position.

The records of 865 adult patients, 327 males and 538 females, treated during a two-year period in the department of occlusal analysis were examined. The mean age was 35 years.

Measurements of vertical and horizontal overlap were made on plaster casts. The shifts of the condyles were measured from the condylar positions secured from intraoral records of the retruded and rest positions of the mandible.

The X^2 analysis was applied on this material in order to reveal possible correlations.

The findings can be summarized as follows:

(1) A large vertical overlap is more often than not accompanied by a large freeway space.

(2) A significant large number of neutral bite (including Angle Class I) cases show an especially small freeway space.

(3) Cases of large horizontal overlap show definitely greater shift of condylar heads when the mandible is moved from the rest position to the retruded position than do cases of small horizontal overlap.

(4) The same is true for Class II (Divisions 1 and 2).

Angle Class III jaw relationship seems to be relatively rare in the periodontitic and arthrosis groups. The same is true of a small vertical overlap.

Perhaps the most important correlation found is the one of large horizontal overlap and translation of the condyles from occlusion to rest position. This finding largely supports the results of a number of other authors.

The distance from the retruded position to the occlusal position does not seem to be affected by a large horizontal overlap; it has been shown to be rather stable in normal cases.

The number of significant correlations found is rather small, particularly as certain interdependent characters of the anatomic features undoubtedly exist. For example, cases of Angle Class II jaw relationship have a larger horizontal (and perhaps also vertical) overlap than those of neutral bite and Angle Class I, respectively.

The following correlations were found to be statistically significant: A large freeway space accompanies a large vertical overlap. Cases of neutroclusion, including Angle Class I malocclusion, generally have a smaller freeway space than Classes II and III. Cases of large horizontal overlap (usually found in Angle Class II) generally have a large shift of the condyles when the mandible moves from rest position to the retruded position.

An Epidemiological Study of Congenital Malformations in New York State: By John T. Gentry, Elizabeth Parkhurst, and George V. Bulin, Jr. *Am. J. Pub. Health* **49**: 497-513, April, 1959.

According to information entered on birth and death certificates, congenital malformation rates are higher in certain areas of New York State than in others. Geologic data indicate a correlation between areas with high malformation rates and geographic locations containing natural materials with relatively high concentrations of radioactive elements.

Data from the Atomic Energy Commission pertaining to a reconnaissance of radioactive rocks of the Hudson Valley and Adirondack Mountains revealed that the townships with a high reported malformation rate were located in an area with igneous bedrock outcrops having relatively high levels of radioactivity and an average range of equivalent uranium content between 0.003 and 0.004 per cent.

Radionuclides from rocks, or their erosion products, may leach into ground waters, be utilized by plant life, or be disseminated into the atmosphere as gases or particulate matter. These materials are usually more abundant when associated with rocks with relatively high concentrations of the radioactive elements.

Differences in the occurrence of radioactive elements in granite versus sedimentary rock types are in the magnitude of as much as five to one. The areas with the greatest concentrations of materials with unusually high radioactivity levels were found to occur in the northwestern and southeastern Adirondacks.

If the association of malformation rates with geology is not an accidental phenomenon, there arises the question as to what factor or factors might be associated with a higher incidence of malformations and geology. One such factor is the socioeconomic status of the population.

The environmental radiation factors described pertain to low dosage levels over long periods of time. With many families, the time factor has included several generations. The sources of radiation, in addition to external radiation, include internal emitters which may have been ingested with food or drinking water or inhaled.

The 50 per cent increase in the level of the higher radiation figure over the lower is similar to the difference between the malformation rates of 12.9 and 17.5. These latter rates reflect the differences found between rural areas classified as probably not containing relatively large quantities of materials with elevated radioactivity versus those containing more highly radioactive igneous material.

The general absence of unusually high external environmental radiation levels in river valley and morainal areas is offset by the potential radiation exposures to man via ground water used for drinking purposes. These data suggest that an internal factor acquired through drinking water may play a more important role than an external agent.

The association of increased malformation rates with residence in areas containing materials with relatively high levels of radioactivity strongly suggests radiation as a primary etiological agent.

The Pathogenesis of Artificial Cranial Deformation: By Melvin L. Moss. *Am. J. Phys. Anthropol.* **16**: 269-286, September, 1958.

Extensive longitudinal and cross-sectional human cephalic growth studies provide normative data, but demonstration of such functional interactions in man is possible only by the study of heads that are deformed either congenitally or artificially. Coincident with a study of the former condition, the morphologic alterations of artificially deformed skulls were analyzed. The correlation of these induced changes with specific external forces yielded a first approximation of the interactions of functional cephalic units in both normal and congenitally deformed heads.

Lateral skull roentgenograms of sixty-five artificially deformed skulls of North and South American Indians were obtained at the Division of Physical Anthropology of the National Museum and the Department of Anthropology of the American Museum of Natural History. A control series consisted of twenty-four skulls of Northwest Coast Indians (Kwakiutl). In addition, fifty-four films of white infants, diagnosed as possessing "postural flattening," were obtained from Babies Hospital, Columbia University-Presbyterian Hospital.

Artificial cranial deformation is produced by the dynamic distortion of the normal vectors of infantile neurocranial growth by externally applied forces. The deforming apparatus cannot alter the magnitude of intrinsic growth, but it does alter its direction. Skull growth is coordinated with and in response to the growth of the enclosed contents which are either protected or supported by the skeletal tissues. The magnitudes and directions (vectors) of endocranial and neural growth are virtually identical. Neither the direction nor the magnitude of these intrinsic forces is precisely known, but we do have data illustrating the results of their actions.

In artificial cranial deformation, the external apparatus prevents the immediately subadjacent bone from expressing its own intrinsic growth pattern and from responding to the forces produced by the growing neural tissues. These neural tissues, in turn, are similarly affected and the direction of growth is altered. Finally the changes in the skull base are brought about as a result of the altered neural growth patterns. The pathogenic sequences work from the outside in.

It follows from this that the entire neurocranium is plastic. No one bone has a *predetermined* topographic position. In vertical deformation, for example, the brain stem and cerebellum are not crushed between a deformed occipital squama and an immovable clivus. Again, the slope of the orbital roof is not

determined by the form of the orbital contents alone. Its slope represents dynamic equilibrium between forces produced by the orbital contents and by forces produced by the overlying frontal cerebral lobes.

Normal human cephalogenesis can be thought of as including the formation of a certain volume of neurocranium. The potential capacity and potential shape of this neurocranial volume are intrinsically determined. As there is good reason to believe that purely mechanical factors can alter the expression of this potential shape in the development of artificial cranial deformation, it is reasonable to assume that analogous mechanical factors similarly determine the attainment of normal skull shape. Each of the component parts of the neurocranium undergoes a characteristic alteration whose coordination in this pathologic situation is as finely adjusted as it is in normal development. This offers support to the belief that the head is far more than just the sum of its component parts and that normal cephalic growth is more than just the resultant sum of the growth of a number of individual parts.

Finally, it is interesting to note that many human congenital cephalic malformations (premature cranial synostosis, for example) present a primary disturbance in the skull base.

It was found convenient to categorize these deformations into two types, vertical and oblique, depending on the orientation of the occipital squama relative to the facial skull.

Artificially deformed Indian skulls, when compared with normal Indian values, revealed the following:

(1) In vertical deformation there exist a midline basal kyphosis, an elevation of the petrous crest, and a ventral shift of the plane of the foramen magnum.

(2) In oblique deformation there are midline platybasia, a depression of the petrous crest, and a dorsal shifting of the foraminal plane.

Children with cranial postural flattening, as compared with normal White values, had deformations identical with those found in the vertical type of artificial deformation.

A hypothesis that cranial deformation is brought about by a redirection of the vectors of normal neurocranial growth is presented. The magnitude of growth of the brain, and therefore of the skull, cannot be altered by extrinsic forces, but its direction can be altered.

Changes in Facial Profile: By Hallam Gresham. *D. Practitioner* **9**: 80-84, December, 1958.

Twenty Angle Class II patients were selected and treated by the Andresen method for periods varying from six to sixteen months, the mean period of treatment being twelve months. In the selection of these patients the only one criterion for suitability was that true mandibular postnormality was evident as part of the dysplasia. Twenty Angle Class II patients of similar age and sex were used as controls. By means of cephalometric radiography, a comparison of these treated and untreated groups was made. Of the group of twenty patients treated, fourteen showed a significant forward movement of the mandible in occlusion. One of the findings of this investigation was that "a significant improvement in the occlusal position of the mandible, involving aesthetics and function, can be achieved by the use of Andresen therapy in the treatment of Angle Class II malocclusion."

Of this group of fourteen patients who showed a significant change immediately following a treatment, twelve were available for further cephalometric radiographs to be taken at periods varying from ten to eighteen months (the mean period was fourteen and one-half months) after completion of appliance therapy. No retrogression in occlusal position was apparent in this second radiographic examination. The author states: "A permanent improvement in mandibular position can be achieved in the treatment of Angle Class II malocclusion by Andresen therapy."

A third cephalometric examination of the individual facial profiles of twelve Angle Class II patients treated by the Andresen method more than five and one-half years ago has recently been undertaken. Twelve patients of similar age and sex were selected from the original Angle Class II control group of twenty patients, and a cephalometric examination of the individual facial profiles of these patients has been made. A comparison of the individual and mean facial profiles of these two groups, one treated by Andresen's method and the other group untreated, is described and discussed.

Evidence is put forward which seems to point out that the orthodontist's role was somewhat more than that of an "innocent bystander" in the facial growth of the group of twelve patients reported upon in this investigation.

Some improvement in mandibular position may be expected, with a concurrent improvement in facial profile, by the use of Andresen therapy in specially selected Angle Class II patients.

Criteria for selection are as follows: (1) a true postnormal mandible, (2) maxillary and mandibular arch width such that "at the commencement of treatment . . . a correct occlusion of buccal teeth is possible when the mandible is brought forward to a position of neutroclusion," and (3) average incisal overbite.

News and Notes

Middle Atlantic Society of Orthodontists

The next meeting of the Middle Atlantic Society of Orthodontists will be held Oct. 4 to 6, 1959, at the Shoreham Hotel in Washington, D. C. Reservations may be made directly with the hotel.

Northeastern Society of Orthodontists

The next meeting of the Northeastern Society of Orthodontists will be held at the Hotel Statler in Hartford, Connecticut, on Monday and Tuesday, Oct. 26 and 27, 1959.

Rocky Mountain Society of Orthodontists

The Rocky Mountain Society of Orthodontists will hold its next annual meeting Sept. 13 to 16, 1959, in the Aspen Institute, at the famed ski resort, Aspen, Colorado.

The formal program will feature Drs. William L. Wilson of Boston, Massachusetts, and Cecil C. Steiner of Beverly Hills, California.

The meeting will be held under the direction of Dr. Howard L. Wilson, President, and Dr. E. H. Mullinax, Secretary, of the Rocky Mountain Society.

Southern Society of Orthodontists

The Southern Society of Orthodontists will hold its thirty-eighth annual session at the Dinkler Plaza Hotel in Atlanta, Georgia, Oct. 11 to 14, 1959. The program follows:

Sunday Afternoon, October 11

Cocktail party.

Monday Morning

Opening Session Essays by Drs. George Anderson, President of the American Association of Orthodontists, and Tom Graber.

Monday Afternoon

Essays by Drs. Earl Shepard and Herbert D. Jaynes.

Monday Evening

Cocktail party.
Banquet.
Floor show.
Dancing.

Tuesday Morning

Second lecture by Dr. Earl Shepard.
Business session.

Tuesday Noon

Luncheon honoring new members.
Speaker: George Anderson.

Tuesday Afternoon

Table clinics.

Wednesday Morning

Economics. Speaker: Mr. Jules King.
Business session.
Adjournment.

Visiting members of the American Association of Orthodontists will be welcome.

LADIES' ACTIVITIES

Co-Chairmen: Kay Smith and Nancy Upshaw (All wives are committee members)

Monday Morning, 9:30 A.M.

"Welcome South Sisters Breakfast" at Dinkler Plaza.
Business meeting follows.

Tuesday, Noon

Luncheon, Flower and Fashion Show at Piedmont Driving Club.

American Board of Orthodontics

The next meeting of the American Board of Orthodontics will be held at the Shoreham Hotel in Washington, D. C., Monday, April 18, through Saturday, April 23, 1960. Orthodontists who desire to be certified by the Board may obtain application blanks from the Secretary, Dr. Wendell L. Wylie, University of California School of Dentistry, The Medical Center, San Francisco 22, California.

Applications for acceptance at the Washington, D. C., meeting, leading to stipulation of examination requirements for the following year, must be filed before March 1, 1960. To be eligible, an applicant must have been an *active* member of the American Association of Orthodontists for at least two years.

American Association for Cleft Palate Rehabilitation

The American Association for Cleft Palate Rehabilitation will hold its eighteenth annual convention at the Brown Palace Hotel in Denver, Colorado, on May 12, 13, and 14, 1960.

This Association is composed of medical, dental, and paramedical specialists who are interested in the rehabilitation of persons with cleft lip and cleft palate.

Associacion Odontologica Argentina

The Associacion Odontologica Argentina will hold its next regular conference Nov. 8 to 13, 1959.

Dr. Wendell Wylie of the University of California will be one of the guest essayists.

Senate Finance Committee Hearings Begin*

The Senate Finance Committee held hearings on H.R. 10, as scheduled, June 17 and 18, 1959. Twenty-five witnesses testified before the Committee. In view of the numerous witnesses who were listed for Wednesday, but were not given an opportunity to express their views, the Committee will resume hearings on the Smathers-Keogh-Simpson Bill in July. The only opposition to the legislation was voiced by the Treasury Department and the AFL-CIO.

There were no indications as to how the Committee might act on this subject. According to a June 18, 1959, *Wall Street Journal* article, "Some Committee members indicated they would support the Bill. Others indicated they would oppose it. A majority seemed to want to work out some compromise that would do what the backers wanted but reduce the Treasury Department's opposition."

First Regional Meeting on Hospital Dental Services to Be Held in October

The need for adequate dental services in hospitals will be stressed at a regional conference of the American Dental Association's Council on Hospital Dental Service to be held Oct. 26 to 28, 1959, at the Leamington Hotel in Minneapolis, Minnesota. Six constituent societies—Iowa, Minnesota, Nebraska, North Dakota, South Dakota, and Wisconsin—and their committees on hospital dental service have been invited to participate.

The conference will be the first in a series of regional meetings aimed at stimulating the interest of constituent societies in developing programs on hospital dental services, according to Dr. Gerard J. Casey, secretary of the Council on Hospital Dental Service. Dr. Casey has said that the need for stimulating activity in this area is reflected by the number of hospitals reporting dental services and the number accredited by the A.D.A. Some 2,323 of 6,818 hospitals in the United States had dental services as of June 1, 1959, and dental departments of 530 hospitals had Council approval on that date.

Another subject to be discussed at the conference will be participation in group insurance programs providing dental benefits.

American Dental Association

"HISTORY OF A.D.A." TO BE AVAILABLE DURING CENTENNIAL SESSION†

"A History of the American Dental Association" will be available for distribution during the centennial session, according to Dr. Lon W. Morrey, Chicago, A.D.A. editor. The volume, expected to run 520 pages with text and illustrations, will be printed in two editions—deluxe at $12.50 a copy and regular at $8.00. Author of the history which recounts "a century of health service" is Dr. Robert W. McCluggage of the history department, Loyola University, Chicago. In addition to being available in New York, the book may be ordered from the Association, Order Department, Desk 380, 222 E. Superior St., Chicago 11.

A.D.A. EXPLAINS POSITION ON TWO LEGISLATIVE MEASURES†

The Association has outlined its position on two pieces of legislation now before congressional groups through letters from Dr. Ralph E. Creig, Cleveland, chairman of the Council on Legislation. Support of the Rhodes Bill (H.R. 6871) was expressed to the House Subcommittee on Health and Safety. The measure is designed to strengthen post-graduate instruction in public health. It authorizes a $75 million outlay for traineeships, project grants and construction during the next five years. The A.D.A. also commented

*From *Bulletin 6-86* of the American Thrift Assembly, June, 1959.
†From the A.D.A *News Letter*, July 1, 1959.

on a bill (S. 2162) sponsored by Sen. Olin D. Johnston (D-S.C.) authorizing medical care and hospitalization insurance for Federal employees and dependents. It was recommended that a section of the bill creating an advisory council be rewritten so as not to preclude appointment of a dental representative.

BRITISH VOTE HONORARY MEMBERSHIP TO THREE OFFICERS OF A.D.A.*

Three officers of the Association have been voted honorary membership in the British Dental Association. They are Dr. Percy T. Phillips of New York, president; Dr. Paul H. Jeserich, Ann Arbor, Mich., president-elect; and Dr. Lon W. Morrey, Chicago, editor. The three will receive certificates from the B.D.A. at a ceremony during the centennial session Sept. 14-18 in New York.

BRITAIN FAILS ITS CHILDREN, DECLARES HEAD OF B.D.A.*

Dr. G. Lotan Venning, newly installed president of the British Dental Association for 1959-60, has accused that country's government of failing its obligation to the children under the national health service. Dr. Venning made the charge during an address at the Association's annual conference. The government, Dr. Venning declared, ignored B.D.A. advice that the care of children's teeth is the basis on which any national scheme should be founded. Although 98 per cent of school children have dental disease, he said, many remain untreated. President of the British organization asserted it was an error to tell the population that free treatment would be available for everyone. This mistake, he explained, has been responsible for producing the present "unsatisfactory" state of affairs. Said Dr. Venning: "The dental profession has done its best to meet the new conditions of practice, but a sense of frustration frequently checks real progress. It may be that in a few years these difficulties will become resolved: that we shall have learned how to adapt the incongruities of a state service to the age-old principles of the free practitioner taking complete responsibility for the treatment of his patient."

A.D.A. TESTIMONY ON KEOGH-SIMPSON BILL DELAYED*

Lack of time prevented the Association and several other groups from presenting testimony on the Keogh-Simpson Bill June 17 before the Senate Finance Committee. Some 23 witnesses were lined up to testify for the House-approved bill (H.R. 10), but only 4 were heard. The A.D.A. had been listed as No. 6 witness. Its testimony is expected to be given at later hearings, probably in July.

Representatives of self-employed groups who did testify disputed U.S. Treasury Department estimates of revenue loss if the bill is enacted. Treasury had forecast first year loss would be $365 million, but spokesman for American Thrift Assembly put the figure at $75 to $100 million. Keogh-Simpson Bill would allow limited tax deferrals on income set aside by self-employed persons for the purpose of setting up retirement programs.

START WORK ON NEW BUILDING OF NATIONAL LIBRARY OF MEDICINE*

Ground-breaking ceremonies for the new $7 million building of the National Library of Medicine have been held at the National Institutes of Health, Bethesda, Md. When completed in 1961, the new structure will house the world's greatest collection of medical literature. The collection now is in an outmoded structure at 7th and Independence Avenue, S.W., Washington, D. C. The new building will have five floors, three of which will be below ground level. Space will be provided for a million and a quarter bound volumes. At the ceremonies was Dr. Basil G. Bibby of Rochester, N. Y., who represents the dental profession on the Library's board of regents.

*From the A.D.A. *News Letter*, July 1, 1959.

"DENTURIST" LEGISLATION DEFEATED IN TWO MORE STATES*

Legislatures of two more states—California and Michigan—have rejected proposals which would have authorized non-dentists to provide prosthetic services directly to the public. This brings to six the number of state legislatures that have refused to support so-called "denturist" legislation during 1959. Other states in which bills have met defeat are Georgia, Nevada, Oklahoma, and Washington. The California action marked defeat for the second of two proposals aimed at regulating the practice of "mechanical dentistry." The Michigan bills sought establishment of a state board of "denturology" empowered to regulate and license "denturologists" and "denturological" laboratories. Meanwhile, in Illinois a "denturist" bill died in a committee of the lower house, while action on a companion measure was still pending in the Senate.

DEFENSE DEPARTMENT HEARS A.D.A. STAND ON ARMY-AIR FORCE DENTAL BILLS

The Association's case supporting the Army and Air Force Dental bills now in both houses of Congress was presented to the Department of Defense during a conference June 29 in Washington, D. C. It was hoped the A.D.A. stand on the bills would help the Department in framing its recommendations to Congress. The association believes the legislation would improve organization and administration of dental services in the Army and Air Force. Chief government representative was Charles C. Finucane, assistant Secretary of Defense. On hand for the Association were Dr. C. Willard Camalier, assistant secretary of A.D.A. and head of its Washington office; Dr. Ralph E. Creig, Cleveland, and Bernard J. Conway, Chicago, chairman and secretary, respectively, of the Council on Legislation; and Dr. Thomas F. Powers, Plainfield, N. J., and Herbert C. Lassiter, Chicago, chairman and secretary of the Council on Federal Dental Services.

CONFERENCE ON SPECIALTIES SET FOR JULY AT CENTRAL OFFICE†

Representatives of specialty boards, academies annd societies interested in policy developments affecting dental specialties and specialization have been invited to a conference July 9 and 10 at the Association's central office. Purpose of the meeting being held by the A.D.A.'s Council on Dental Education will be to describe progress made in re-evaluating Association policies and regulations regarding specialties and specialization. The Council was directed by the Board of Trustees to undertake such a re-evaluation. To be studied at the July conference is the Council's 1959 Annual Report containing its recommendations to the House of Delegates. The meeting will give the Council a chance to explain its policies and philosophies regarding the dental specialties, according to Dr. Shailer Peterson, secretary.

A.D.A. MEMBERSHIP DRAWS CLOSER TO GOAL OF 95,000†

Membership in the Association moved closer in May to the goal of 95,000 set for the centennial year by the Council on Membership. There are 92,910 members as of May 31, representing a new high for the Association as well as an increase of 1,372 during the fifth month of the year.

BULLETIN URGES A.D.A. MEMBERS' SUPPORT OF ARMY-AIR FORCE BILLS†

A special *Information Bulletin* explaining purposes of the Army and Air Force Dental bills has been issued to members of the Association by the Council on Legislation. The legislation, which has been introduced in both houses of Congress, would improve organization and administration of dental service in the Army and Air Force. Dentists are asked in the *Bulletin* to write their senators and representatives urging support of the bills. In addition, present and former Army and Air Force dental officers are requested to submit evidence of the need for the legislation to the Council on Legislation. The Senate bills (S. 1993 and S. 1994) introduced May 19 by Sen. Jackson (D-Wash.) are

*From the A.D.A. *News Letter*, July 1, 1959.
†From the A.D.A. *News Letter*, June 15, 1959.

similar to measures (H.R. 5984 and H.R. 5985) offered earlier in the House by Rep. Rivers (D-S.C.). Passage of the bills would give dental officers in the two services authority to make professional decisions necessary to the operation of an efficient dental care program, according to Dr. Ralph E. Creig of Cleveland, chairman of the Council on Legislation.

NEW INFORMATION INCLUDED IN 1959 LICENSURE BOOKLET*

Three new tables of information are included for the first time in the 1959 edition of "Requirements and Registration Data; State Dental Examining Boards." The pamphlet, available from the A.D.A. Council on Dental Education, presents up-to-date information on requirements for licensure of dentists and dental hygienists in the United States and its territories. The new tables list the results of dental licensure examinations given in 1958, clinical examination requirements for dental licensure, and a tabulation of licensed dental specialists and their specialties.

U.S. DEPARTMENT OF HEALTH, EDUCATION, AND WELFARE

The Public Health Service has announced publication of a report which shows the amount of fluoride naturally present in community water supplies throughout the country.

NUMBER OF COMMUNITIES USING NATURALLY FLUORIDATED WATER*

STATE	NUMBER OF COMMUNITIES	POPULATION	STATE	NUMBER OF COMMUNITIES	POPULATION
Total	1,903	6,952,402			
Alabama	14	22,161	Nevada	14	7,715
Arizona	37	78,378	New Hampshire	1	500
Arkansas	11	37,993	New Jersey	9	33,687
California	43	264,646	New Mexico	57	465,295
Colorado	76	219,379	New York	17	19,715
Connecticut	3	947	North Carolina	20	35,798
Delaware	0	0	North Dakota	33	39,967
Florida	29	255,843	Ohio	119	203,100
Georgia	8	16,535	Oklahoma	49	57,045
Idaho	22	107,933	Oregon	21	34,074
Illinois	136	452,137	Pennsylvania	0	0
Indiana	90	190,256	Rhode Island	7	1,780
Iowa	184	406,922	South Carolina	20	46,571
Kansas	70	113,352	South Dakota	109	73,345
Kentucky	1	1,545	Tennessee	4	8,036
Louisiana	41	250,398	Texas	356	2,766,767
Maine	0	0	Utah	18	18,499
Maryland	15	24,908	Vermont	0	0
Massachusetts	0	0	Virginia	36	36,369
Michigan	46	163,437	Washington	15	37,497
Minnesota	17	17,864	West Virginia	3	1,956
Mississippi	23	65,978	Wisconsin	27	114,155
Missouri	19	81,687	Wyoming	10	42,112
Montana	38	76,187			
Nebraska	35	59,933			

*Fluoride content of 0.7 or more parts of fluoride per million parts of water.

The report is based on data compiled by the dental directors of all state health agencies at the request of the Public Health Service.

Water supplies of 1,903 cities and towns with a combined population of 7,000,000 contain enough fluoride naturally to prevent two out of three dental cavities.

*From the A.D.A. *News Letter*, June 15, 1959.

Communities in forty-three states use water in which the decay-preventing fluoride occurs naturally. Community populations served range from less than 50 to more than 500,000.

In Texas, 2,700,000 persons in 356 towns use naturally fluoridated water. In New Mexico, 465,000 people (or 68 per cent of the total population) live in communities with water supplies naturally containing fluoride.

More than 450,000 people in 136 Illinois towns and 406,000 in 184 Iowa communities drink water with fluoride added by nature. At least 100,000 people in each of ten states—California, Colorado, Florida, Idaho, Indiana, Kansas, Louisiana, Michigan, Ohio, and Wisconsin—live in towns served by naturally fluoridated water supplies.

Thirty-five per cent of the 7,000,000 persons using naturally fluoridated water live in towns and cities with populations of more than 50,000. Thirty-eight per cent live in towns of from 5,000 to 50,000, and 27 per cent live in communities of under 1,000.

"The fluoride found naturally in water is identical in its effect to the fluoride used in controlled fluoridation," said Dr. John W. Knutson, Chief Dental Officer of the Public Health Service.

"The 1,800 cities now using controlled fluoridation adjust the fluoride content to that found in a great many of the naturally fluoridated water supplies throughout the country, or from 0.7 to 1.2 parts of fluoride per million parts of water.

"The 35 million people living in these 1,800 communities plus the 7 million using naturally fluoridated water means that one out of every three people using central water supplies now drinks water that has been fluoridated by nature or by the community."

Copies of the new report, "Natural Fluoride Content of Communal Water Supplies in the United States," Public Health Service Publication No. 655, may be obtained from the U. S. Government Printing Office, Washington 25, D. C.

A.A.O. Receives Research Grant

The American Association of Orthodontists has received a grant of $9,835.00 from the National Institute of Dental Research, United States Public Health Service. The grant was made in support of the Workshop on Roentgenographic Cephalometrics held at the Bolton Fund Headquarters, Western Reserve University, Cleveland, Ohio, July 7 to 9, 1959. Dr. J. A. Salzmann is chairman of the Special Committee on Roentgenographic Cephalometrics.

Conference on Dental Specialties

Policy developments affecting dental specialties and specialization was the theme of a conference of representatives of specialty boards, academies, and societies held on July 9 and 10, 1959, under the sponsorship of the American Dental Association's Council on Dental Education.

Chairman W. C. Fleming explained that the conference proposed to explain the recommendations and policies which will be presented to the House of Delegates for consideration at the New York meeting of the A.D.A. The conference gave all representatives an opportunity to discuss the general policies and philosophies expressed in the Council's report and resolutions.

Harold Hillenbrand Named to White House Committee

Dr. Harold Hillenbrand, secretary of the American Dental Association, has been named by Arthur S. Flemming, Secretary of Health, Education, and Welfare, to serve on the National Advisory Committee for the White House Conference on Aging which will be held in January, 1961, in Washington, D. C.

This committee, which consists of 130 outstanding citizens, will direct the plans, preparations, and conduct of the White House Conference, which was authorized by Congress and approved by President Eisenhower last year.

World Orthodontic Bibliography

An index of orthodontic literature of the world has been received from the publisher, Alberto J. Cervera of Valencia, Spain. The index contains both an author index and a subject classification. The index comprises a booklet of 110 pages and lists 654 orthodontic authors from various countries of the world; 881 subjects are listed in the bibliography.

Notes of Interest

Robert W. Browne, D.D.S., M.S., announces the opening of his office for the practice of orthodontics at 420 Metz Bldg., Grand Rapids, Michigan.

Dr. Edward L. Corlett announces the removal of his office from 277 North Glassell St. to 1005 East Chapman Ave., Orange, California, practice limited to orthodontics.

Ignacio R. Quijada, D.D.S., announces the removal of his office to Plaza Luisa, Suite No. 4, 1300 Luisa St., Santa Fe, New Mexico, practice limited to orthodontics.

Drs. D. J. Rees, G. A. Woods, and E. F. Butori announce that they will have associated with them in the practice of orthodontics Dr. Kleve C. Johnson, 1033 S. W. Yamhill, Portland, Oregon.

Forthcoming meetings of the American Association of Orthodontists:
1960—Shoreham Hotel, Washington, D. C., April 24 to 28.
1961—Denver, Colorado.
1962—Los Angeles, California.
1963—American Hotel, Miami Beach, Florida.

OFFICERS OF ORTHODONTIC SOCIETIES

The AMERICAN JOURNAL OF ORTHODONTICS is the official publication of the American Association of Orthodontists and its component societies. The Editorial Board of the JOURNAL is composed of a representative of each of the component societies.

American Association of Orthodontists

(Next meeting April 24-28, 1960, Washington)

President, George M. Anderson - - - - - - - - - - - - 3700 N. Charles St., Baltimore Md.
President-Elect, William R. Humphrey - - - - - - - - - - - Republic Bldg., Denver, Colo.
Vice-President, Frank A. Heimlich - - - - - - - - 1824 State St., Santa Barbara, Calif.
Secretary, Earl E. Shepard - - - - - - - - - - - - - 8230 Forsyth, St. Louis, Mo.

Central Section of the American Association of Orthodontists

(Next meeting Sept. 28 and 29, 1959, Chicago)

President, John R. Thompson - - - - - - - - - - 55 E. Washington St., Chicago, Ill.
Secretary-Treasurer, William F. Ford - - - - - - - 575 Lincoln Ave., Winnetka, Ill.
Director, Elmer F. Bay - - - - - - - - - - - 216 Medical Arts Bldg., Omaha, Neb.

Great Lakes Society of Orthodontists

(Next meeting Nov. 29-Dec. 2, 1959, Cleveland)

President, Richard C. Beatty - - - - - - - - - - - - 1140 Hanna Bldg., Cleveland, Ohio
Secretary, D. C. Miller - - - - - - - - - - - - - 40 South Third St., Columbus, Ohio
Director, Harlow L. Shehan - - - - - - - 601 Jackson City Bank Bldg., Jackson, Mich.

Middle Atlantic Society of Orthodontists

(Next meeting Oct. 4-6, 1959, Washington)

President, Stephen C. Hopkins, Sr. - - - - - 1746 K St., N. W., Washington, D. C.
Secretary-Treasurer, Charles S. Jonas - - - - - - Mayfair Apts., Atlantic City, N. J.
Director, B. Edwin Erikson - - - - 3726 Connecticut Ave., N. W., Washington, D. C.

Northeastern Society of Orthodontists

(Next meeting Oct. 26 and 27, 1959, Hartford, Conn.)

President, Wilbur J. Prezzano - - - - - - - - - Medical Centre, White Plains, N. Y.
Secretary-Treasurer, David Mossberg - - - - - - 36 Central Park S., New York, N. Y.
Director, Norman L. Hillyer - - - - - - - 230 Hilton Ave., Hempstead, L. I., N. Y.

Pacific Coast Society of Orthodontists

President, Richard Railsback - - - - - - - - - 1333 Grand Ave., Piedmont, Calif.
Secretary-Treasurer, Warren Kitchen - - - - - - 2037 Irving St., San Francisco, Calif.
Director, Richard Railsback - - - - - - - - - - 1333 Grand Ave., Piedmont, Calif.

Rocky Mountain Society of Orthodontists

(Next meeting Sept. 13-16, 1959, Aspen, Colo.)

President, Howard L. Wilson - - - - - - - - - - 1107 Republic Bldg., Denver, Colo.
Secretary-Treasurer, E. H. Mullinax - - 209 Lakewood Medical Center, Lakewood, Colo.
Director, Ernest T. Klein - - - - - - - - - - 632 Republic Bldg., Denver, Colo.

Southern Society of Orthodontists

(Next meeting Oct. 11-14, 1959, Atlanta)

President, H. Harvey Payne - - - - - - - - - - 60 Fifth St., N.E., Atlanta, Ga.
Secretary-Treasurer, William H. Oliver - - - - - - - 1915 Broadway, Nashville, Tenn.
Director, Boyd W. Tarpley - - - - - - - 2118 Fourteenth Ave., S., Birmingham, Ala.

Southwestern Society of Orthodontists

(Next meeting Oct. 4-7, 1959, Houston)

President, Marcus Murphey - - - - - - - - - - 2017 West Gray, Houston, Texas
Secretary-Treasurer, Harold S. Born - - - - - - 908 S. Johnstone, Bartlesville, Okla.
Director, Nathan Gaston - - - - - - - - - - - - 701 Walnut St., Monroe, La.

American Board of Orthodontics

President, L. Bodine Higley - - - - - University of North Carolina, Chapel Hill, N. C.
Vice-President, Jacob A. Salzmann - - - - - - - - 654 Madison Ave., New York, N. Y.
Secretary, Wendell L. Wylie - - - - - - University of California School of Dentistry, The Medical Center, San Francisco, Calif.
Treasurer, Paul V. Reid - - - - - - - - - 1501 Medical Arts Bldg., Philadelphia, Pa.
Director, B. F. Dewel - - - - - - - - - - - - - - 708 Church St., Evanston, Ill.
Director, Frank P. Bowyer - - - - - - - - - 608 Medical Arts Bldg., Knoxville, Tenn.
Director, Alton W. Moore - University of Washington School of Dentistry, Seattle, Wash.

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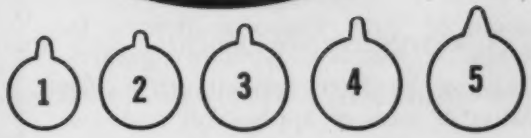

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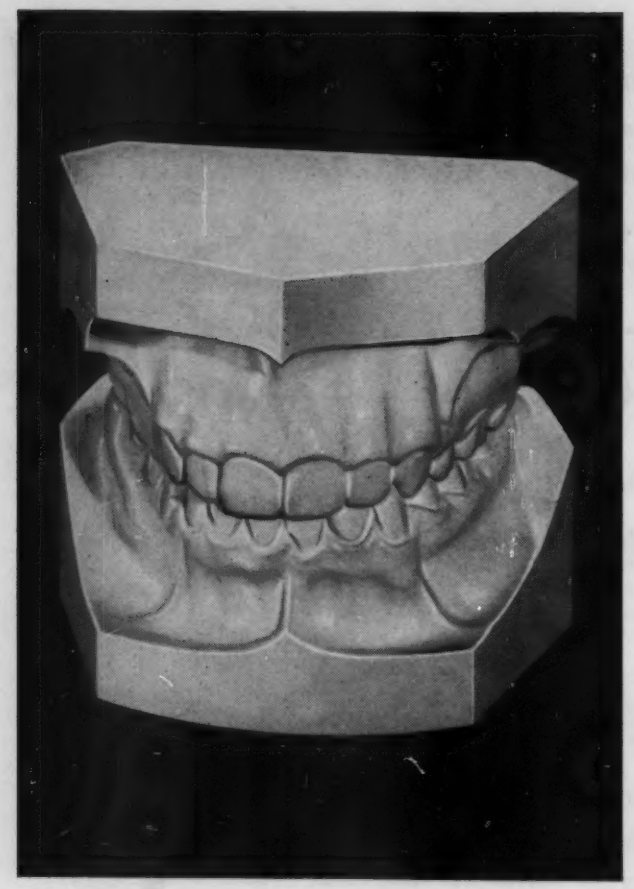

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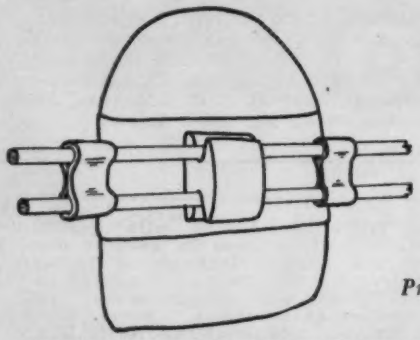

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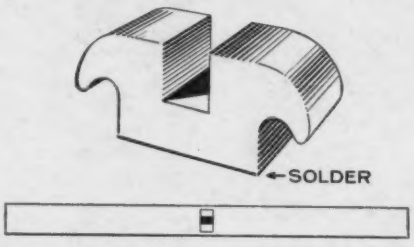
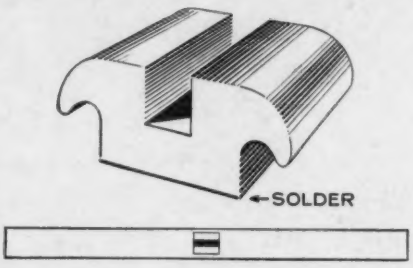


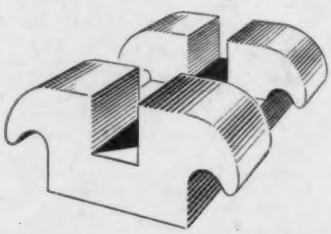
Posterior .100″ wide M 452AS



Pre-soldered Metalba* Edgewise Brackets are strong; remain clean in the mouth; can be soldered to; can be used on precious metal or Stainless Steel bands; and, used over and over again.

Divided Triple-width Edgewise Brackets

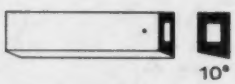
M 455



A convenient bracket for rotations as it provides two anchor points for ligatures. Supplied without solder to permit slight bending if required.

Anchor Tubes

M 474



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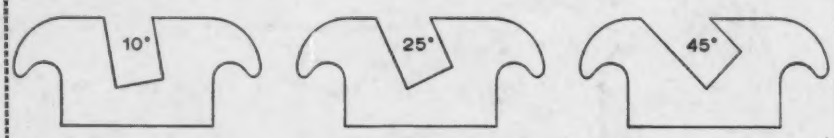
Torque slot, Divided Triple-width Edgewise Brackets



The angle of the wire slot in the Bracket gives direction to the Torque force of arch wire.

M 516	Torque 10°	Width	.140 inches
M 517	Torque 10°	Width	.180 inches
M 518	Torque 25°	Width	.180 inches
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